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This annual report describes the results of the second year (academic year 1967-68) of research work done in the Child Development Research and Evaluation Center for Head Start at Temple University. Part One of this report discusses the Center's National Data Program and sets out in tabular form demographic and cognitive data obtained on 86 urban children (mostly Negroes) from Philadelphia and 41 Appalachian children (mostly whites) from West Virginia, Kentucky, and Tennessee. A second part of the report presents descriptions and discussions of several faculty studies. Described therein are three projects and nine studies. This research deals primarily with the developmental problems of disadvantaged lower class children. (WD)

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CHILD DEVELOPMENT RESEARCH AND EVALUATION CENTER FOR HEAD START

TEMPLE UNIVERSITY

1967 - 1968

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Theron Alexander, Ph. D.
Center Director

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ANNUAL REPORT
August 31, 1968

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The contribution of the following people to the operation of the Center is gratefully acknowledged.

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College of Education

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St. Christopher's Hospital for Children

Victor C. Vaughan, III, M.D.
Professor and Chairman
Department of Pediatrics
St. Christopher's Hospital for Children

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Rosemary Mazzatenta, Assistant Director
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Lafayette Powell, Director of Psychological Services
Pre-Kindergarten Project
Philadelphia Board of Education

Mildred Davis, Director
Project Head Start
Douglas High School
Kingsport, Tennessee

Willard Mauller, Director
Project Head Start
Taylor County Rural Areas Development Corporation
Grafton, West Virginia

Darlene Rice, Coordinator of Early Childhood Program
Knox County Economic Opportunity Council
Barbourville, Kentucky

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Professor of Human Development, Division of Educational Psychology

National Data Program

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Michael Hill, B.S.*

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John Tighe, M.S.*

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Jack Wartell, M.A.

Nancy Weidenfeld, M.Ed.

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Individual Research Projects

Project I

Robert R. Bell, Principal Investigator
Associate Professor of Sociology

Projects II and III

E. Kuno Beller, Ph.D., Principal Investigator
Professor of Psychology

Thomas Spiritoso, M.A., Statistical Consultant

Nancy Deeg, Secretary

Research Assistants

Saul Fisher, M.A.

David Graham, M.A.

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*Summer, 1968

Project IV

Surang Kowatrakul, Ph.D.
Associate Professor of Educational Psychology

Eugene Stivers, Ph.D.
Associate Professor of Educational Psychology

Elizabeth Cowan, Student Assistant

Research Assistants

Mary Martire, M.Ed.

John Phin, M.Ed.

Heather Rabinowitz, B.A.

Research and Evaluation Centers for Head Start

University	Director	Region
Bank Street College	Dr. Herbert Zimiles	New York City (overlaps with Teachers College), Maryland, Delaware, New Jersey, D. C.
Boston	Dr. Frank Garfunkel	New England
Chicago	Dr. Virginia Shipman	Illinois, Indiana, Western Kentucky and Western Tennessee
Hawaii	Dr. Dorothy Adkins	Hawaii, Guam, Samoa, Alaska, Washington, Oregon
Kansas	Dr. Russell Tyler	Kansas, Nebraska, Western Missouri, Colorado, Wyoming, Montana, North & South Dakota
Michigan State	Dr. Robert Boger Dr. Marilyn Story	Wisconsin (except Chicago suburbs), Michigan, Minnesota, Western Ohio and Iowa
South Carolina	Dr. Myles Friedman	South Carolina, North Carolina, Virginia, Georgia, Florida
Syracuse	Dr. William Meyer	New York State (excluding 75 mile radius of New York City), Western Pennsylvania and Eastern Ohio, Puerto Rico and Virgin Islands

University	Director	Region
Teachers College, Columbia	Dr. Robert Thorndike	New York City plus 75 mile radius (overlaps Bank Street, which is responsible for North Jersey suburbs of New York City
Temple	Dr. Theron Alexander	Urban Philadelphia, Central & Eastern Pennsylvania, West Virginia, Eastern Kentucky & Eastern Tennessee (i.e., "Appalachia")
Texas	Dr. John Pierce-Jones	Texas, New Mexico, Arizona, Oklahoma, Utah
Tulane	Dr. Shuell Jones	Louisiana, Alabama, and Mississippi
Southern	Dr. Edward Johnson	Louisiana, Mississippi, and Arkansas
U. C. L. A.	Dr. Carolyn Stern	California (all), and Nevada

RESEARCH GOALS AND METHODOLOGY

Child Development Research and Evaluation Center

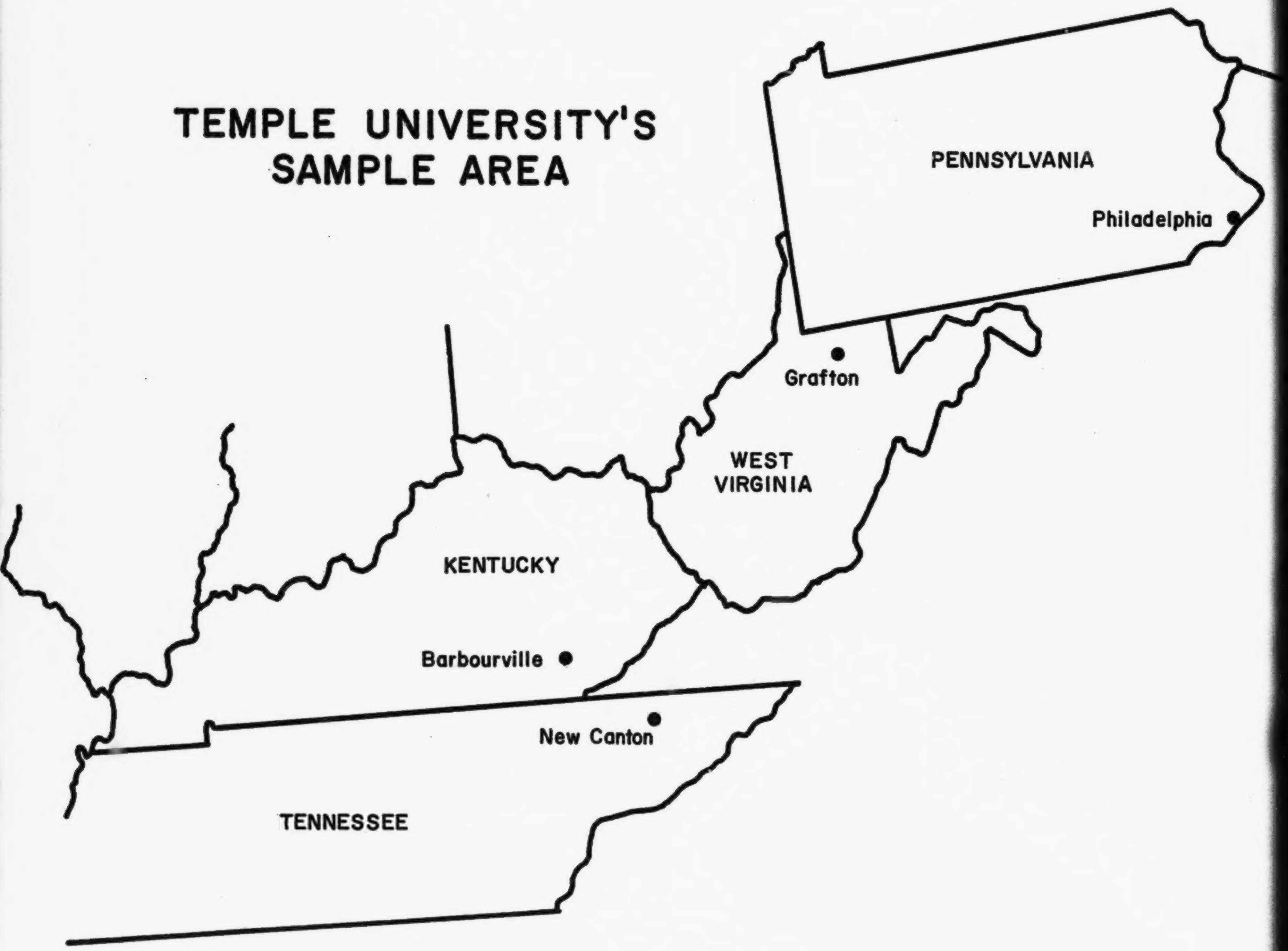
The National Data Program at Temple University

With the completion of this report the second year 1967-68 of the Child Development Research and Evaluation Center for Head Start ends. The year has brought progress through the collection of a wider range of data as well as an extension of the sample to include data from still another state. More faculty and graduate students have been involved and the Center has been called by staff members in Washington as second to none in the national program. The University has a unique opportunity in the nation for a number of reasons: first, it is in one of the great population areas where many people live in poverty as part of urban deterioration; and second, as a result of the educational program of Philadelphia, the Center has an opportunity to gather data on very young children (three and four years of age).

Temple University's Center also has had responsibility for gathering information about Appalachia. Many of the people are of pioneer stock and have lived in isolation from the mainstream of American culture for many years. The study of the capabilities and responses of the children to an enriched educational program is of interest and importance.

As this report is being completed, the research plan for the academic year 1968-69 is also being completed. The research program is further expanded with more faculty members and graduate students being involved. A number of new programs which are likely to be of considerable significance are planned. One example is the investigation of the importance of classroom material in the learning of children and this study will be carried on with the collaboration of the Philadelphia Public Schools. Another new development is the use of the College of Education Laboratory for a research study of the importance of a specific type of teacher-pupil interaction. Also, this year a preliminary study is being carried on with the cooperation of the School of Medicine of children who are unable to continue in Head Start classes. In addition, a number of interesting studies of faculty members who have not been part of the Center before will be undertaken.

TEMPLE UNIVERSITY'S SAMPLE AREA



Subjects in Sample

In accordance with sampling guidelines dated August 23, 1967, Centers in the sample are of two different types. Six of the Centers are in Philadelphia and have predominately Negro populations and the remaining five Centers are in the Appalachian areas of West Virginia, Kentucky, and Tennessee. Most of the children in these Centers are Caucasian. There is a total of 15 classes included in the sample.

The 1967 sample design calls for two categories: (1) a Core sample of 127 children, and (2) a Cluster sample of 50 children. All of the children received the battery of tests designated for the 1967-68 National Evaluation Program and the Cluster children had a supplemental set of procedures administered to them as defined by the Social-Emotional Cluster Committee.

The sample is divided between the sexes (males 45%, females 55%) as suggested in the guidelines. Children with more than three months of Head Start and children who did not fall within the age range of three years, six months to four years, nine months were eliminated from the sample.

In the initial testing Philadelphia began with 102 children and Appalachia with 49 (Simpson, West Virginia 11; Barbourville 29; and New Canton 9). As a certain degree of attrition is inevitable, the Philadelphia number was reduced to 86 in the final testing and the Appalachian to 41 (Simpson 10, Barbourville 27, and New Canton 4).

DESCRIPTION OF CENTERS

PS 001940

Description of Philadelphia Head Start Centers

All of the Centers are under the administrative control of the Philadelphia Board of Education's Pre-Kindergarten Project. The year-round Head Start Program here is called "Get Set." OEO distributes funds to the Philadelphia Anti-Poverty Action Committee which in turn provides the funds to the Board of Education for the program.

Cornerstone Baptist Church, 33rd and Diamond Streets, Philadelphia, Pennsylvania; Grant Number 2059 (Number of pupils = 174)

The Cornerstone Center is located in a Baptist church which is situated in a predominantly residential area. The people residing in this area are English-speaking Negroes. Across from the Center is the largest city park, Fairmount Park, which is used for outdoor activities. In addition to this, the Department of Recreation has an improved playground area within a half block of the Center. Classrooms are located on the second floor of the church in a section of the building attached to the religious area. There is adequate lighting, ample storage space, and an abundance of equipment. Several auditoriums, a kitchen, and a gymnasium in the basement, which is well equipped, are used.

Cornerstone maintains nine different classes. There are 15 children per class for the three-year olds and 20 children per class for the four-year olds.

First African Presbyterian Church, 42nd Street and Girard Avenue, Philadelphia, Pennsylvania; Grant Number 2059 (Number of pupils = 84)

The First African Center is located on Girard Avenue, a major thoroughfare in West Philadelphia. It is within walking distance of the Philadelphia Zoo and Fairmount Park. Both of these facilities are used as recreation areas in good weather. The neighborhood, aside from the stores along Girard Avenue, is basically residential and is composed primarily of old homes which have been converted into multiple dwelling units. The population is predominantly English-speaking, urban Negroes.

The Center is housed in a 75-year-old church which also serves as a neighborhood meeting place and community center. The facilities include several classrooms, a kitchen, an auditorium which is used as a free-play area and lunchroom. There is an adequate amount of standard play equipment.

The Center houses five full-day classes--two with 18 children and three with 17, 16, and 15 children respectively. The staff consists of five teachers, five aides, and two cooks. Hot lunches as well as morning and afternoon snacks are served daily.

Harrison Plaza, 1350 North Tenth Street, Philadelphia, Pennsylvania; Grant Number 2059 (Number of pupils = 31)

Harrison Plaza is located one block from a major thoroughfare in North Philadelphia. The Redevelopment Authority began work in this area approximately ten years ago and the construction of another project nearby is now in progress. Housing consists of a combination of single dwelling units and several "high-rise" apartment houses occupied primarily by English-speaking, urban Negroes.

The Harrison Center is on the same block as the Harrison Elementary School and is used at night as the neighborhood community center. Adjacent to the elementary schoolyard is a protected outdoor play area with direct access to the Center. This area is equipped with standard playground equipment.

The Center's indoor facilities include several multi-purpose rooms, individual playrooms, an auditorium, a kitchen area, and an abundance of standard equipment. All facilities are located on the ground floor.

Harrison Plaza Center has two full-day classes with 15 and 16 children respectively. The staff consists of two teachers, two aides, and a cook who prepares hot lunches and morning and afternoon snacks.

Metropolitan Baptist Church, 3500 Baring Street, Philadelphia, Pennsylvania; Grant Number 2059 (Number of pupils = 87)

The Metropolitan Center is located in the basement of a church. It is in a racially mixed neighborhood and there are many old homes which have been converted into apartments for university students. Nearby the population is predominantly Negro and it is from this group that children come to the Center.

The basement is composed of several small rooms and one large one which is divided to accommodate two classes. There is a gymnasium which is supplied with (some) playground equipment. A large outdoor grass-covered playground is located nearby which also has some play equipment.

Metropolitan has six classes a day--two full-day classes and four half-day classes. There is a teacher and an aide for each class, and two cooks who prepare lunch for the children.

Moore Memorial Baptist Church, 1421 West Dauphin Street, Philadelphia, Pennsylvania; Grant Number 2059 (Number of pupils = 68)

The Moore Memorial Baptist Church is located in an English-speaking, urban Negro neighborhood in North Philadelphia. The Center is bounded by a section of small shops and some light industry. The residential areas are located behind the two major streets forming the boundaries of the Center. The homes are converted into multiple apartment units.

The classrooms are located in the basement of an old church. One large room is divided into three main areas by cabinets and other pieces of classroom furniture. The facilities are not entirely adequate. The room is poorly lit and extremely noisy, which suggests difficulty in maintaining an adequate program.

A fence surrounds a small outdoor play area which is equipped with several see-saws and wagons. Other toys are brought out by the teachers from the classroom.

There are four part-time classes per day, two in the morning and two in the afternoon. The staff consists of four teachers, four aides, and two cooks. Hot lunches plus morning and afternoon snacks are served.

St. Phillip's Evangelical Lutheran Church, 53rd Street and Wyalusing Avenue, Philadelphia, Pennsylvania; Grant Number 2059 (Number of pupils = 90)

The St. Phillip's Center is located in an Evangelical Lutheran Church in West Philadelphia in a semi-residential, lower middle class Negro neighborhood. In the vicinity of the church there are private row homes and several small stores.

The Center consists of two floors with two classes on each floor. A large gymnasium equipped with the traditional preschool equipment is located on the top floor. In addition, there is a playground behind the Center where the children play in good weather. The kitchen is located on the top floor and hot lunches are served to the children in two shifts by the Center's two cooks.

The Center has six classes--two morning, two afternoon, and two all-day. Each class has its own teacher and aide. Each of the six classes has 15 children.

Description of Appalachian Head Start Centers

Barbourville, Kentucky, Grant Number 2070

Barbourville, a town with a population of 3,200, is located in Knox County, Kentucky, in the Cumberland Gap area in the southeastern part of the state. Initially, the town was settled by people of Scotch-Irish descent but the majority of these settlers moved on to the bluegrass areas of Kentucky. The land which was once rich in mining products and timberland, is now unproductive. Annual floods had devastated the area up until 1958, but since that time, the town has been protected by flood walls.

There are three Head Start Centers in this area: Barbourville Community Center, Rosenwald, and Bethel. The three Centers are sponsored by the Knox County Economic Opportunity Council. The majority of the children are Caucasian and the Negro population is approximately 1%. Each of the Centers is located in a small rural school building leased from the county school system. All of the children are transported to the Centers by bus. Approximately half of the fathers of the children are on welfare while the others are employed in a wide variety of jobs.

Barbourville Community Center, School Street, Barbourville, Kentucky; Grant Number 2070 (Number of pupils = 17)

The Barbourville Community Center is located in the town of Barbourville in a basically residential area. A school is located next door. There is a play area outside but there is no playground equipment.

The Center is housed in a two room building, the front room which is used for community center activities and the back room which is the classroom. The facilities include central heating, indoor lavatory facilities, and a kitchen. The children are served hot lunches as well as morning and afternoon snacks. The classroom is large with adequate lighting and is well supplied so that a variety of activities are possible.

The Center has one class only, an all-day group consisting of 17 children. The staff includes the head teacher, an aide, and a cook. Parents often help and participate in community center activities during the time their children are in school.

Bethel, Crane's Nest, Kentucky; Grant Number 2070 (Number of pupils = 11)

The Bethel Center is located several miles off one of the main highways in Knox County. The Center itself is located on an extension road. The majority of the area is farmland, although there are some private homes in the immediate vicinity.

The Center consists of two rooms and a kitchen in which the children are served snacks and a hot meal. One of the rooms, devoted primarily to the children, contains toys and play equipment. The other room is used by teachers, aides, and administrators as a meeting area. A coal stove heats this room while the children's room is heated by gas. A playground adjacent to the Center contains a slide and several barrels.

Rosenwald, Route 1, Barbourville, Kentucky; Grant Number 2070 (Number of pupils = 15)

The Rosenwald Center is located on a road just off one of the main highways in Knox County, approximately five miles from Barbourville. The classes are housed in an old school building where the only means of heat are potbelly stoves. The building consists of several classrooms, offices, a kitchen, an auditorium, and indoor lavatory facilities. The classroom facilities are adequate. There is a large outdoor play area supplied with swings and a slide.

All of the children live in small homes close to the Center. The composition of the children in class is half Negro and half white.

New Canton, Tennessee, Grant Number 3068 (Number of pupils = 67)

New Canton is a small, wooded, rural area in Tennessee. The Center is located in a new school building which was built as a Negro public school but was abandoned when the schools were integrated. It is a well-heated, well-lit building containing spacious rooms. A large indoor gymnasium is used as a lunchroom where a morning snack and lunch are served to the children.

There is an outdoor play area which is used daily. Transportation to the Center is provided by bus. There are three full-day classes held in the Center.

Simpson, West Virginia, Grant Number 450 (Number of pupils = 11)

The Simpson Center is located in a rural, semi-isolated area of

Appalachia approximately 15 miles from Grafton, West Virginia, which has a population of about 7,000. The Simpson area was settled around 1870 primarily by Italians and Germans. In addition to these people, there is a fairly large group having Caucasian, Negro, and Indian ancestry. The Head Start Center is under the sponsorship of the Taylor County Rural Areas Development Corporation.

The Center is located in a small wooden two-room school. The classes meet in the larger of three rooms situated on the first floor. One of these rooms is used for food storage; the other is a general recreation room used by teenage members of the community. There are no outside play facilities at the school. All of the children are transported to the Center either by parent volunteers or by the teacher. Almost 1/4 of the fathers are dependent solely on welfare while the others are employed as unskilled laborers.

There are two classes--the morning class meets from 9:00 a.m. to 12:30 p.m. and the afternoon class meets from 12:00 noon to 3:20 p.m. Both classes receive a hot lunch.

Table 1

Center Facilities

Center	Type of Structure Occupied by Center							
	School Building	Church	Parochial School	Community Center	Housing Project	Store Building	Renovated Private Home	Other
Philadelphia								
First African		X						
Harrison				X				
Metropolitan		X						
Cornerstone		X						
Moore Memorial		X						
St.Phillip's		X						
Appalachia								
Barbourville				X				
Rosenwald								X
Bethel							X	
Simpson				X				
New Canton	X							

Table 2

Centers, Classrooms, and Subjects

Location	Centers	Classrooms	Number of Pupils	
			Initial	Final
Philadelphia, Pennsylvania	6	11	102	86
Simpson, West Virginia	1	2	11	10
Barbourville, Kentucky	3	3	29	27
Church Hill, Tennessee	1	3	9	4
Total Sample	11	19	151	127

Table 3

Center Personnel

Type of Personnel	Philadelphia			Appalachia		
	Race		Total	Race		Total
	White (Number)	Negro (Number)		White (Number)	Negro (Number)	
Administrators	3	5	8	7	4	11
Teachers	8	2	10	4	1	5
Others	13	29	42	18	2	20
Total Personnel	24	36	60	29	7	36

Table 4

Number of Professional Staff Members

Center	Type of Personnel					
	Teachers	Nurses*	Administrators*	Social Workers*	Psychologists, Counselors, etc.*	Consultants*
Philadelphia						
First African	5	1	1	1	1	1
Harrison	2	1	1	1	1	1
Metropolitan	2 4*	1	1	1	1	1
Cornerstone	5 4*	1	1	1	1	1
Moore Memorial	4*	1	1	1	1	1
St. Phillip's	2 4*	1	1	1	1	1
Total Philadelphia	16 16*	6	6	6	6	6
Appalachia						
Barbourville	1 1*		1	1		1
Bethel	1		1	1		1
Rosenwald	1		1	1		1
Simpson	1		1		1	1
New Canton	1 1*		1	1	1	2
Total Appalachia	5 2*		5	4	2	6

*Part-time

Table 5

Center and Classroom Data According to Age and Sex

Philadelphia Centers--Initial

Center	Number of Pupils	Age							Total
		3-0 - 3-6	3-6 - 4-0	4-0 - 4-6	4-6 - 5-0	5-0 - 5-6	5-6 - 6-0	6-0 - 6-6	
First African	22								
M		8	4						12
F		6	4						10
Harrison Plaza	13								
M		1	5						6
F		3	4						7
Metropolitan	10								
M		2	2	2					6
F		1	3						4
Cornerstone	17								
M		10							10
F		7							7
Moore Memorial	16								
M		2	5	1	1				9
F		3	1	3					7
St. Phillip's	24								
M		7	4						11
F		10	3						13
Total Philadelphia	102								
M		30	20	3	1				54
F		30	15	3					48

Table 6

Center and Classroom Data According to Age and Sex

Appalachian Centers--Initial

Center	Number of Pupils	Age							Total
		3-0 - 3-6	3-6 - 4-0	4-0 - 4-6	4-6 - 5-0	5-0 - 5-6	5-6 - 6-0	6-0 - 6-6	
Barbourville	10								
M					1	1			2
F					1	4	3		8
Bethel	10								
M		1		1			1		3
F		1	1	1	2	1	1		7
Rosenwald	9								
M						3			3
F				1	1	4			6
Simpson	11								
M					1	1	2		4
F					1	3	2	1	7
New Canton	9								
M						2	2		4
F						2	3		5
Total Appalachia	49								
M		1		1	2	7	5		16
F		1	1	2	5	14	9	1	33

Table 7

Description of Center and Classroom Composition

Philadelphia*

Head Start Centers	Number of Pupils	Building Space		
		Number of Rooms	Square Ft. Per Child	
			Indoors	Outdoors
First African				
M	38	6	41	0
F	42			
Harrison Plaza				
M	15	2	68	150
F	14			
Metropolitan				
M	41	6	29	611
F	45			
Cornerstone				
M	60	9	14	0
F	68			
Moore Memorial				
M	31	4	26	67
F	32			
St. Phillip's Evangelical				
M	42	6	32	121
F	48			
Total Philadelphia				
M	227	33	35	158
F	249			

*All children in Philadelphia are English-speaking Negroes

Table 8

Description of Center and Classroom Composition

Appalachia

Head Start Centers	Number of Pupils	Race		Building Space		
				Number	Square Ft. Per Child	
		White	Negro	of Rooms	Indoors	Outdoors
Barbourville (Kentucky)						
Barbourville Center						
M	8	7	1	1	17	115
F	9	8	1			
Bethel Center						
M	3	3	..	1	19	87
F	10	10	..			
Rosenwald Center						
M	6	4	2	1	22	120
F	9	5	4			
Total Barbourville						
M	17	14	3	3	19	107
F	28	23	5			
Simpson (West Virginia)						
Simpson Center						
M	15	15	..	2	17	50
F	13	12	1			
Church Hill (Tennessee)						
New Canton						
M	34	27	7	3	42	56
F	26	21	5			
Total Church Hill						
M	34	27	7	3	42	56
F	26	21	5			
Total Appalachia						
M	66	56	10	8	26	71
F	67	56	11			

Table 9

Characteristics of Teaching Staff

Philadelphia

Head Start Centers	Number of Classes	Staff Number				Educational Level				Experience with Pre-school Children					
		Teachers		Aides		High School		College		Under 1 yr.		1 yr. to 5 yrs.		Over 5 yrs.	
		White	Negro	White	Negro	T*	A**	T*	A**	T*	A**	T*	A**	T*	A**
First African	5														
M		..	..	..	..	..	..	..	..	..	..	..	..	..	..
F		3	2	..	5	..	5	5	..	2	1	3	4	..	..
Harrison Plaza	2														
M		1	..	..	..	..	..	1	..	..	..	1	..	..	..
F		1	..	..	2	..	2	1	..	1	..	..	1	..	1
Metropolitan	6														
M		..	..	..	..	..	..	..	..	..	..	..	..	..	..
F		5	1	..	6	..	6	6	..	1	1	5	4	..	1
Cornerstone	8														
M		3	1	..	..	..	..	4	..	1	..	3	..	..	..
F		..	4	2	6	1	7	3	1	..	..	4	7	..	1
Moore Memorial	4														
M		1	..	..	..	..	..	1	..	..	..	1	..	..	..
F		3	..	..	4	..	3	3	1	1	1	2	3	..	..
St. Phillip's Evangelical	6														
M		2	..	..	..	..	..	2	..	1	..	1	..	..	..
F		3	1	..	6	..	5	4	1	1	..	3	3	..	3
Total Philadelphia	31														
M		7	1	..	..	..	..	8	..	2	..	6	..	..	..
F		15	8	2	29	1	28	22	3	6	3	17	22	..	6

T* = Teachers
A** = Aides

Table 10
Characteristics of Teaching Staff
Appalachia

Head Start Centers	Number of Classes	Staff Number				Educational Level				Experience with Pre-school Children					
		Teachers		Aides		High School		College		Under 1 yr.		1 yr. to 5 yrs.		Over 5 yrs.	
		White	Negro	White	Negro	T*	A**	T*	A**	T*	A**	T*	A**	T*	A**
Barbourville (Kentucky)															
Barbourville Center	1														
M		..	..	..	..	..	..	..	..	..	..	..	..	..	..
F		1	..	..	1	1	1	..	..	..	..	1	1	..	..
Bethel Center	1														
M		..	..	..	..	..	..	..	..	..	..	..	..	..	..
F		1	..	1	..	..	1	1	..	..	..	..	1	1	..
Rosenwald Center	1														
M		..	..	..	..	..	..	..	..	..	..	..	..	..	..
F		..	1	1	..	..	1	1	..	..	..	1	1	..	..
Total Barbourville	3														
M		..	..	..	..	..	..	..	..	..	..	..	..	..	..
F		2	1	2	1	1	3	2	..	..	..	2	3	1	..
Simpson (West Virginia)															
Simpson Center	2														
M		..	..	..	..	..	..	..	..	..	..	..	..	..	..
F		2	..	2	..	..	2	2	..	..	..	2	1	..	1
Church Hill (Tennessee)															
New Canton	3														
M		..	..	..	..	..	..	..	..	..	..	..	..	..	..
F		2	1	3	..	2	3	1	..	..	..	3	2	..	1
Total Appalachia	11														
M		..	..	..	..	..	..	..	..	..	..	..	..	..	..
F		6	2	7	1	3	8	5	..	..	..	7	6	1	2

T* = Teachers
A** = Aides

DESCRIPTION OF INSTRUMENTS ADMINISTERED TO THE SAMPLE

Data Gathering Techniques

1967-1968

The Stanford-Binet Intelligence Scale

The Binet was administered during the initial and final phases of the Head Start program to determine whether any changes took place in the intellectual functioning (IQ) of the Head Start child during the program.

The Stanford-Binet requires the child to perform on tasks involving visual discrimination, memory, language usage, abstract thinking, etc. Developmental tasks such as drawing figures, block building, and bead stringing are also essential features of the scale.

Inventory of Factors

The Inventory of Factors was designed to assess the extent to which certain variables affected the child's performance.

Factors such as attention-span, sense of comprehension, and language mastery are observed to determine to what degree they affect performance.

Social Interaction Observation Procedure (SIOP)

As designed by the University of Kansas, observations are structured so as to obtain detailed information about the behavior of children in a group (classroom) setting.

The purpose of this instrument is to obtain social and emotional data. It was administered during the initial and final phases of the Head Start program.

Essentially the SIOP consisted of 15 three minute observations for each child during which information about verbal and nonverbal communication and interaction with others was recorded.

Observation of Substantive Curricular Input (OSCI)

The OSCI is designed to obtain a record of ongoing classroom activity. The observations are intended to provide information about the curriculum in the classrooms. Information consists of: (1) context of activity (major activities such as performing and building are identified); (2) content focus (more detailed information about the activities is provided, e.g. skills used, kinds of interaction, types of creative activity and so forth); (3) nature of child's involvement (active, passive, etc.); and, (4) locus of control (who is in control of the activity).

Observations were made during five visits. Each visit took place in a different month and on a different day of the week. All times of the day were covered.

Parent Interview

The Parent Interview provides demographic, sociological, and attitudinal information about family life of children with emphasis on the social and emotional relationships in the family.

The interview contained items such as the number of children, adults, and rooms in the home; the parent's perception of Head Start's effect (if any); educational aspirations and expectations; social-emotional characteristics of the child, child rearing patterns, and educational attitudes.

Collaboration with University of Chicago, University of Kansas, and Michigan State University

(Cluster)

An additional battery of tests was administered to one third of our sample children in a collaborative study.

Social Interaction Observation Procedure (SIOP)

The SIOP was administered again to these children during the time between the initial and final data gathering.

Brown IDS Self-Concept Referents Test

This test was devised to assess the young child's perceptions of himself in relation to others. Essentially the child was asked to report how he saw himself, how he felt his peers regarded him, and how his teacher regarded him.

To facilitate this, a core of fourteen bipolar adjectival items (such as good, bad; sad, happy) were presented to the child in an "either-or" format. The more socially desirable choices were scored against the less socially desirable choices.

An interesting feature of the test is that the child was constantly referred to a photograph of himself "in order to aid him in maintaining objectivity" about himself.

The Play Situation-Picture Board Sociometric Technique

Since the child's ability to relate effectively to others in his peer group is a significant variable in early social development, this technique was developed in order to obtain a sociometric analysis with preschool children.

The child was required to select five out of ten cards, which depicted certain play situations with which he was familiar (e.g. playing with dolls or trucks). Then he was asked to choose the children he would most and least like to play with in each of these situations.

Photographs of all the children in the class were made available to the child in order to assist him in his choices. When a choice had to be made, he was asked to point to the photograph of the child he wanted (or didn't want).

Mother-Child Interaction Tasks

Following the work of Hess and Shipman (1965, 1967) these tasks' focus is concerned with teaching styles as related to the child's cognitive performance and subsequent cognitive growth.

Two teaching tasks were required of the mother: the first asked her to teach her child to sort toys according to two dimensions (function and color) and to be able to give a rationale for his grouping; the second task required the mother to teach her child to put a moderately difficult puzzle together (age graded five to six years old).

The mother was allowed a maximum of fifteen minutes for each task and following each one, the child was tested by the examiner to assess his understanding of the task. Each of these tests was administered on two occasions with an interval of three to four months.

TABULAR PRESENTATION OF DATA

Table 11

Stanford-Binet Intelligence Scores

Initial Testing (Fall 1967)

Philadelphia N=102

Head Start Center	Number of Pupils	Intelligence Scores		
		IQ range	Mean	SD
First African Presbyterian				
All day class	11	79-125	99	16.01
All day class	11	81-130	98	13.14
Total First African	22	79-130	99	14.16
Harrison Plaza				
All day class	13	84-105	91	7.61
Total Harrison	13	84-105	91	7.61
Metropolitan Baptist				
All day class	10	68-100	86	9.71
Total Metropolitan	10	68-100	86	9.71
Cornerstone Baptist				
All day class	10	86-109	100	8.62
Morning class	7	87-121	96	11.78
Total Cornerstone	17	86-121	99	10.01
Moore Memorial				
Afternoon class	9	76-111	91	10.43
Afternoon class	7	68-107	88	14.07
Total Moore	16	68-111	90	11.45
St. Phillip's Evangelical				
All day class	13	75-99	89	7.20
Morning class	11	71-113	91	12.11
Total St. Phillip's	24	71-113	90	9.90
Total Philadelphia	102	68-130	93	11.55

Table 12

Stanford-Binet Intelligence Scores

Initial Testing (Fall 1967)

Appalachia N=49

Head Start Center	Number of Pupils	Intelligence Scores		
		IQ range	Mean	SD
Barbourville (Kentucky)				
Barbourville Center				
All day class	10	71-100	89	9.33
Total Barbourville	10	71-100	89	9.33
Bethel Center				
All day class	10	62-126	84	22.84
Total Bethel	10	62-126	84	22.84
Rosenwald Center				
All day class	9	75-90	82	4.54
Total Rosenwald	9	75-90	82	4.54
Total Barbourville	29	62-126	85	12.24
Simpson (West Virginia)				
Simpson Center				
Morning class	5	52-109	78	21.53
Afternoon class	6	60-95	81	14.84
Total Simpson	11	52-109	79	18.24
Church Hill (Tennessee)				
New Canton				
Morning class	9	74-99	87	7.25
Total Church Hill	9	74-99	87	7.25
Total Appalachia	49	52-126	84	13.26

Table 13

Stanford-Binet Intelligence Scores

Final Testing (Spring 1968)

Philadelphia N=86

Head Start Center	Number of Pupils	Intelligence Scores		
		IQ range	Mean	SD
First African Presbyterian				
All day class	10	81-135	107.2	16.88
All day class	11	84-126	101.3	11.68
Total First African	21	81-135	104.2	14.28
Harrison Plaza				
All day class	11	81-109	95.9	7.89
Total Harrison	11	81-109	95.9	7.89
Metropolitan Baptist				
All day class	9	90-111	99.1	7.46
Total Metropolitan	9	90-111	99.1	7.46
Cornerstone Baptist				
All day class	8	67-123	104.0	17.67
Morning class	5	86-115	101.2	11.34
Total Cornerstone	13	67-115	102.6	14.51
Moore Memorial				
Afternoon class	8	105-111	106.4	2.61
Afternoon class	6	79-111	96.6	11.55
Total Moore	14	79-111	101.5	7.08
St. Philiip's Evangelical				
All day class	10	84-116	101.0	9.03
Morning class	8	99-109	103.5	3.78
Total St. Phillip's	18	84-116	102.3	6.41
Total Philadelphia	86	67-135	101.53	11.20

Table 14

Stanford-Binet Intelligence Scores

Final Testing (Spring 1968)

Appalachia N=41

Head Start Center	Number of Pupils	Intelligence Scores		
		IQ range	Mean	SD
Barbourville (Kentucky)				
Barbourville Center				
All day class	9	82-118	98.9	12.88
Total Barbourville	9	82-118	98.9	12.88
Bethel Center				
All day class	9	79-119	94.8	17.10
Total Bethel	9	79-119	94.8	17.10
Rosenwald Center				
All day class	9	79-116	93.4	10.90
Total Rosenwald	9	79-116	93.4	10.90
Total Barbourville	27	79-119	95.7	13.63
Simpson (West Virginia				
Simpson Center				
Morning class	5	68-108	87.6	16.13
Afternoon class	5	61-93	84.3	15.56
Total Simpson	10	61-108	86.0	15.85
Church Hill (Tennessee)				
New Canton				
Morning class	4	74-125	96.8	21.20
Total Church Hill	4	74-125	96.8	21.20
Total Appalachia	41	61-125	93.3	14.46

Explanation of SIOP Tables

The verbal interaction tables indicate the lowest and highest number of times individual children initiated or responded to some other child or adult in the classroom (during observation periods) e.g., child B asked child C for a pencil (verbal interaction) and child C said, "I don't have a pencil." (verbal response).

The nonverbal tables represent initiations and responses involving behaviors such as crying, touching, sign language, turning away, etc. It becomes clear that children with low scores down to zero may be isolates who can be easily identified by this procedure.

Table 15

Social Interaction Observation Procedure

Initial Data (Fall 1967)

Information about Children's Behavior in the Classroom

Philadelphia N=102

Head Start Centers	Number of pupils	Verbal Interaction			
		Initiations		Responses	
		Range	Mean	Range	Mean
First African Presbyterian					
All day class	11	0-39	23.54	3-15	7.18
All day class	11	7-45	29.72	3-14	9.27
Total First African	22	0-45	26.63	3-15	8.22
Harrison Plaza					
All day class	13	4-56	28.92	5-13	8.38
Total Harrison	13	4-56	28.92	5-13	8.38
Metropolitan Baptist					
All day class	10	6-42	26.90	5-36	13.90
Total Metropolitan	10	6-42	26.90	5-36	13.90
Cornerstone Baptist					
All day class	10	8-60	28.40	3-24	13.50
Morning class	7	15-78	48.71	6-29	15.57
Total Cornerstone	17	8-78	38.55	3-29	14.53
Moore Memorial					
Afternoon class	9	25-65	55.66	2-14	20.33
Afternoon class	7	7-69	37.00	0-14	17.85
Total Moore	16	7-69	46.33	0-14	19.09
St. Phillip's Evangelical					
All day class	13	7-53	24.00	2-22	10.61
Morning class	11	7-40	24.45	4-18	9.90
Total St. Phillip's	24	7-53	24.22	2-22	10.25
Total Philadelphia	102	0-78	31.92	0-36	12.39

Table 16

Social Interaction Observation Procedure

Initial Data (Fall 1967)

Information about Children's Behavior in the Classroom

Appalachia N=49

Head Start Centers	Number of pupils	Verbal Interaction			
		Initiations		Responses	
		Range	Mean	Range	Mean
Barbourville (Kentucky)					
Barbourville Center					
All day class	10	2-35	20.40	7-22	15.60
Total Barbourville	10	2-35	20.40	7-22	15.60
Bethel Center					
All day class	10	1-41	17.40	3-16	9.00
Total Bethel	10	1-41	17.40	3-16	9.00
Rosenwald Center					
All day class	9	1-43	25.66	5-26	15.33
Total Rosenwald	9	1-43	25.66	5-26	15.33
Total Barbourville	29	1-43	21.15	3-26	13.31
Simpson (West Virginia)					
Simpson Center					
Morning class	5	15-33	26.80	7-13	11.40
Afternoon class	6	18-50	26.00	10-18	10.00
Total Simpson	11	15-50	26.40	7-18	10.70
Church Hill (Tennessee)					
New Canton					
Morning class	9	22-58	39.22	13-36	19.66
Total New Canton	9	22-58	39.22	13-36	19.66
Total Church Hill	9	22-58	39.22	13-36	19.66
Total Appalachia	49	1-58	25.81	3-36	14.05

Table 17

Social Interaction Observation Procedure

Initial Data (Fall 1967)

Information about Children's Behavior in the Classroom

Philadelphia N=102

Head Start Centers	Number of pupils	Non-verbal Interaction			
		Initiations		Responses	
		Range	Mean	Range	Mean
First African Presbyterian					
All day class	11	0-15	4.09	5-21	8.81
All day class	11	2-14	6.27	7-17	12.27
Total First African	22	0-15	5.18	5-21	10.54
Harrison Plaza					
All day class	13	1-22	9.38	2-16	9.00
Total Harrison	13	1-22	9.38	2-16	9.00
Metropolitan Baptist					
All day class	10	5-42	22.30	8-48	24.90
Total Metropolitan	10	5-42	22.30	8-48	24.90
Cornerstone Baptist					
All day class	10	10-45	22.40	12-34	21.80
Morning class	7	11-40	30.85	14-39	23.80
Total Cornerstone	17	10-45	26.62	12-39	22.54
Moore Memorial					
Afternoon class	9	7-37	10.88	4-27	11.55
Afternoon class	7	5-32	4.71	8-16	12.28
Total Moore	16	5-37	7.79	4-27	11.91
St. Phillip's Evangelical					
All day class	13	4-11	6.53	4-22	9.53
Morning class	11	3-15	8.90	6-21	13.81
Total St. Phillip's	24	3-15	7.71	4-22	11.67
Total Philadelphia	102	0-45	13.16	2-48	15.09

Table 18

Social Interaction Observation Procedure

Initial Data (Fall 1967)

Information about Children's Behavior in the Classroom

Appalachia N=49

Head Start Centers	Number of pupils	Non-verbal Interaction			
		Initiations		Responses	
		Range	Mean	Range	Mean
Barbourville (Kentucky)					
Barbourville Center					
All day class	10	1-20	10.40	9-28	17.80
Total Barbourville	10	1-20	10.40	9-28	17.80
Bethel Center					
All day class	10	1-26	8.60	3-29	17.00
Total Bethel	10	1-26	8.60	3-29	17.00
Rosenwald Center					
All day class	9	1-19	5.77	10-26	16.55
Total Rosenwald	9	1-19	5.77	10-26	16.55
Total Barbourville	29	1-26	8.25	3-29	17.08
Simpson (West Virginia)					
Simpson Center					
Morning class	5	4-20	15.00	12-15	16.00
Afternoon class	6	6-20	15.40	8-13	10.40
Total Simpson	11	4-20	15.20	8-15	13.20
Church Hill (Tennessee)					
New Canton					
Morning class	9	19-39	27.22	16-41	29.33
Total New Canton	9	19-39	27.22	16-41	29.33
Total Church Hill	9	19-39	27.22	16-41	29.33
Total Appalachia	49	1-39	13.93	3-41	18.86

Table 19

Social Interaction Observation Procedure

Final Data (Spring 1968)

Information about Children's Behavior in the Classroom

Philadelphia N=86

Head Start Centers	Number of pupils	Verbal Interaction			
		Initiations		Responses	
		Range	Mean	Range	Mean
First African Presbyterian					
All day class	10	0-42	15.80	3-16	7.80
All day class	11	0-40	18.63	4-19	10.63
Total First African	21	0-42	17.21	3-19	9.21
Harrison Plaza					
All day class	11	13-53	34.18	1-12	7.45
Total Harrison	11	13-53	34.18	1-12	7.45
Metropolitan Baptist					
All day class	9	14-25	17.00	4-24	10.55
Total Metropolitan	9	14-25	17.00	4-24	10.55
Cornerstone Baptist					
All day class	8	17-91	30.25	5-28	12.75
Morning class	5	18-48	39.25	4-21	14.80
Total Cornerstone	13	17-91	34.82	4-28	13.77
Moore Memorial					
Afternoon class	8	29-57	36.25	3-24	9.37
Afternoon class	6	14-51	28.83	6-23	12.16
Total Moore	14	14-57	32.54	3-24	10.76
St. Phillip's Evangelical					
All day class	10	8-33	19.30	7-21	12.40
Morning class	8	3-40	23.37	6-12	8.00
Total St. Phillip's	18	3-40	21.33	6-21	10.20
Total Philadelphia	86	0-91	26.18	1-28	10.32

Table 20

Social Interaction Observation Procedure

Final Data (Spring 1968)

Information about Children's Behavior in the Classroom

Appalachia N=41

Head Start Centers	Number of pupils	Verbal Interaction			
		Initiations		Responses	
		Range	Mean	Range	Mean
Barbourville (Kentucky)					
Barbourville Center					
All day class	9	7-38	15.22	6-24	11.55
Total Barbourville	9	7-38	15.22	6-24	11.55
Bethel Center					
All day class	9	4-29	17.00	4-15	8.77
Total Bethel	9	4-29	17.00	4-15	8.77
Rosenwald Center					
All day class	9	4-42	12.88	2-14	7.88
Total Rosenwald	9	4-42	12.88	2-14	7.88
Total Barbourville	27	4-42	15.03	2-24	9.40
Simpson (West Virginia)					
Simpson Center					
Morning class	5	13-37	26.40	6-15	10.80
Afternoon class	5	19-46	23.00	7-20	10.60
Total Simpson	10	13-46	24.70	6-20	10.70
Church Hill (Tennessee)					
New Canton					
Morning class	4	24-56	35.00	5-34	20.50
Total New Canton	4	24-56	35.00	5-34	20.50
Total Church Hill	4	24-56	35.00	5-34	20.50
Total Appalachia	41	4-56	20.96	2-34	[illegible]1.88

Table 21

Social Interaction Observation Procedure

Final Data (Spring 1968)

Information about Children's Behavior in the Classroom

Philadelphia N=86

Head Start Centers	Number of pupils	Non-verbal Interaction			
		Initiations		Responses	
		Range	Mean	Range	Mean
First African Presbyterian					
All day class	10	2-19	9.00	4-20	11.00
All day class	11	3-18	8.54	5-19	12.54
Total First African	21	2-19	8.77	4-20	11.77
Harrison Plaza					
All day class	11	1-12	6.18	3-11	5.54
Total Harrison	11	1-12	6.18	3-11	5.54
Metropolitan Baptist					
All day class	9	2-11	6.55	3-12	6.66
Total Metropolitan	9	2-11	6.55	3-12	6.66
Cornerstone Baptist					
All day class	8	2-37	15.00	13-27	16.62
Morning class	5	11-20	21.00	6-24	19.60
Total Cornerstone	13	2-37	18.00	6-27	18.11
Moore Memorial					
Afternoon class	8	1-11	5.62	6-16	9.12
Afternoon class	6	2-9	5.16	3-18	12.00
Total Moore	14	1-11	5.39	3-18	10.56
St. Phillip's Evangelical					
All day class	10	0-16	7.20	1-21	9.40
Morning class	8	2-18	9.75	4-17	8.12
Total St. Phillip's	18	0-18	8.47	1-21	8.76
Total Philadelphia	86	0-37	8.89	1-27	10.23

Table 22

Social Interaction Observation Procedure

Final Data (Spring 1968)

Information about Children's Behavior in the Classroom

Appalachia N=41

Head Start Centers	Number of pupils	Non-verbal Interaction			
		Initiations		Responses	
		Range	Mean	Range	Mean
Barbourville (Kentucky)					
Barbourville Center					
All day class	9	2-13	6.33	3-17	8.77
Total Barbourville	9	2-13	6.33	3-17	8.77
Bethel Center					
All day class	9	2-21	7.77	5-21	9.77
Total Bethel	9	2-21	7.77	5-21	9.77
Rosenwald Center					
All day class	9	0-23	6.33	4-19	9.77
Total Rosenwald	9	0-23	6.33	4-19	9.77
Total Barbourville	27	0-23	6.81	3-21	9.43
Simpson (West Virginia)					
Simpson Center					
Morning class	5	4-11	7.60	8-16	12.80
Afternoon class	5	6-16	8.00	3-23	8.60
Total Simpson	10	4-16	7.80	3-23	10.70
Church Hill (Tennessee)					
New Canton					
Morning class	4	3-23	12.75	7-36	21.25
Total New Canton	4	3-23	12.75	7-36	21.25
Total Church Hill	4	3-23	12.75	7-36	21.25
Total Appalachia	41	0-23	8.19	3-36	12.05

Table 23

Parent Interview Information

Philadelphia N=102*

Head Start Centers	Number of Pupils	% Male Models In Home			Educational Level of Parents					
					% to 8th Grade		% to 12th Grade		% to College	
		Natural Father	Adult Male	None	Mother	Father	Mother	Father	Mother	Father
First African Presbyterian	22	47.8	17.4	34.8	26.0	13.0	73.9	43.4	..	..
Harrison Plaza	13	45.5	18.2	27.3	18.2	..	81.8	45.5	..	..
Metropolitan Baptist	10	20.0	50.0	30.0	10.0	..	90.0	20.0	..	..
Cornerstone Baptist	17	69.2	7.7	15.4	..	7.7	84.6	61.6	7.7	..
Moore Memorial	16	53.3	20.0	20.0	13.4	26.7	86.6	33.4	..	..
St. Phillip's Evangelical	24	50.0	15.0	35.0	10.0	5.0	85.0	35.0	5.0	5.0
Total Philadelphia	102	49.1	21.4	27.1	12.9	8.8	83.7	39.8	2.1	.8

*All Children In Philadelphia are English-speaking Negroes

Table 24

Parent Interview Information

Appalachia N=49

Head Start Centers	Number of Pupils		% Male Models in Home			Educational Level of Parents					
						% to 8th Grade		% to 12th Grade		% to College	
	White	Negro	Natural Father	Adult Male	None	Mother	Father	Mother	Father	Mother	Father
Barbourville (Kentucky)											
Barbourville Center	9	1	66.7	..	33.3	55.5	66.6	44.4	..	..	..
Bethel Center	10	..	100.0	..	..	66.6	55.5	33.3	22.2	..	..
Rosenwald Center	8	1	100.0	..	..	40.0	40.0	60.0	40.0	..	..
Total Barbourville	27	2	88.9	..	11.1	54.0	54.0	45.9	20.7	..	..
Simpson (West Virginia)											
Simpson Center	11	..	72.7	..	18.2	36.4	54.6	45.5	18.2	..	..
Total Simpson	11	..	72.7	..	18.2	36.4	54.6	45.5	18.2	..	..
Church Hill (Tennessee)											
New Canton	6	3	80.0	10.0	10.0	30.0	40.0	70.0	40.0	..	..
Total Church Hill	6	3	80.0	10.0	10.0	30.0	40.0	70.0	40.0	..	..
Total Appalachia	44	5	83.9	2.0	12.3	45.7	51.3	50.6	24.1	..	..

Table 25

Parent Interview Information

Philadelphia N=102

Head Start Centers	Mothers Who Perceived Changes due to Head Start		% Parents Who Read to their Children			Expectations of Mothers for their Children's Education			
	% Yes	% None	Often	Occasionally	Never	% Grade School	% High School	% Vocational	% College
First African Presbyterian	82.6	17.4	47.8	43.5	8.7	..	65.2	4.3	26.0
Harrison Plaza	100.0	..	75.0	..	25.0	9.1	45.5	27.3	18.2
Metropolitan Baptist	100.0	..	75.0	..	25.0	..	70.0	10.0	20.0
Cornerstone Baptist	92.3	7.7	61.6	38.5	..	..	69.2	7.7	15.4
Moore Memorial	100.0	..	78.5	21.4	..	..	86.7	..	13.4
St. Phillip's Evangelical	95.0	5.0	95.0	5.0	..	..	50.0	10.0	35.0
Total Philadelphia	94.9	5.0	72.2	18.1	9.8	1.5	64.4	9.9	21.3

Table 26

Parent Interview Information

Appalachia N=49

Head Start Centers	Mothers Who Perceived Changes due to Head Start		% Parents Who Read to their Children			Expectation of Mothers for their Children's Education			
	% Yes	% None	Often	Occasionally	Never	% Grade School	% High School	% Vocational	% College
Barbourville (Kentucky)									
Barbourville Center	100.0	..	66.6	11.1	22.2	..	77.8	11.1	11.1
Bethel Center	66.7	33.3	77.7	22.2	..	44.4	44.4	..	11.1
Rosenwald Center	100.0	..	100.0	..	..	..	50.0	10.0	40.0
Total Barbourville	88.9	11.1	81.4	11.1	7.4	14.8	57.4	7.0	20.7
Simpson (West Virginia)									
Simpson Center	100.0	..	91.0	9.1	..	..	63.6	..	9.1
Total Simpson	100.0	..	91.0	9.1	..	..	63.6	..	9.1
Church Hill (Tennessee)									
New Canton Center	100.0	..	85.8	14.3	..	..	60.0	20.0	20.0
Total Church Hill	100.0	..	85.8	14.3	..	..	60.0	20.0	20.0
Total Appalachia	93.3	6.7	84.2	11.3	4.4	8.9	59.2	8.0	18.3

Table 27

Brown IDS Self Concept Referents Test

Initial Data (Fall 1967)

Positive Responses

Philadelphia N=41

Head Start Center	Number of Pupils	Positive feelings toward self expressed by subjects		Perceptions of others' positive feelings toward self	
		Mean	Range	Mean	Range
First African					
All day class	7	10.86	3-14	21.43	15-26
All day class	8	10.00	6-14	18.25	7-27
Total First African	15	10.40	3-14	19.73	7-27
Cornerstone					
All day class	7	12.00	10-14	20.00	11-26
Morning class	4	10.75	10-12	20.50	17-24
Total Cornerstone	11	11.55	10-14	20.18	11-26
St. Phillip's					
All day class	7	10.14	5-14	18.29	13-25
Morning class	8	10.75	7-14	19.25	8-26
Total St. Phillip's	15	10.47	5-14	18.80	8-26
Total Philadelphia	41	10.73	3-14	19.51	7-27

Table 28

Brown IDS Self Concept Referents Test

Initial Data (Fall 1967)

Positive Responses

Appalachia N=10

Head Start Center	Number of Pupils	Positive feelings toward self expressed by subject		Perceptions of others' positive feelings toward self	
		Mean	Range	Mean	Range
Barbourville					
All day class	5	13.20	13-14	26.80	25-28
Rosenwald					
All day class	5	11.80	10-14	24.60	20-28
Total Appalachia	10	12.50	10-14	25.70	20-28

Table 29

Brown IDS Self-Concept Referents Test

Final Data (Spring 1968)

Positive Responses

Philadelphia N=34

Head Start Center	Number of Pupils	Positive feelings toward self expressed by subjects		Perceptions of others' positive feelings toward self	
		Mean	Range	Mean	Range
First African					
All day class	7	10.29	6-14	20.43	14-27
All day class	7	11.86	10-13	22.14	15-25
Total First African	14	11.07	6-14	21.28	14-27
Cornerstone					
All day class	6	12.33	11-13	24.33	18-28
Morning class	4	11.75	7-14	20.50	7-27
Total Cornerstone	10	12.10	7-14	22.80	7-28
St. Phillip's					
All day class	6	9.50	3-12	18.50	8-24
Morning class	4	7.50	3-13	13.75	5-22
Total St. Phillip's	10	8.70	3-13	16.60	5-24
Total Philadelphia	34	10.68	3-14	20.35	5-28

Table 30

Brown IDS Self-Concept Referents Test

Final Data (Spring 1968)

Positive Responses

Appalachia N=10

Head Start Center	Number of Pupils	Positive feelings toward self expressed by subjects		Perceptions of others' positive feelings toward self	
		Mean	Range	Mean	Range
Barbourville					
All day class	5	13.40	12-14	27.20	26-28
Rosenwald					
All day class	5	10.60	9-12	22.60	19-26
Total Appalachia	10	12.00	9-14	24.90	19-28

Table 31

Brown IDS Self Concept Referents Test

Initial Data (Fall 1967)

Negative Responses

Philadelphia N=41

Head Start Center	Number of Pupils	Negative feelings toward self expressed by subjects		Perceptions of others' negative feelings toward self	
		Mean	Range	Mean	Range
First African					
All day class	7	2.86	0-10	6.28	1-13
All day class	8	3.75	1-8	9.25	1-19
Total First African	15	3.33	0-10	7.87	1-19
Cornerstone					
All day class	7	1.29	0-3	5.43	0-8
Morning class	4	2.75	1-4	4.50	0-7
Total Cornerstone	11	1.82	0-4	5.09	0-8
St. Phillip's					
All day class	7	3.86	0-9	9.71	0-8
Morning class	8	3.25	0-7	8.75	0-11
Total St. Phillip's	15	3.53	0-9	9.20	0-11
Total Philadelphia	41	3.00	0-10	7.61	0-19

Table 32

Brown IDS Self-Concept Referents Test

Initial Data (Fall 1967)

Negative Responses

Appalachia N=10

Head Start Center	Number of Pupils	Negative feelings toward self expressed by subjects		Perceptions of others' negative feelings toward self	
		Mean	Range	Mean	Range
Barbourville					
All day class	5	.60	0-1	1.20	0-3
Rosenwald					
All day class	5	1.80	0-4	2.80	0-8
Total Appalachia	10	1.90	0-4	3.10	0-8

Table 33

Brown IDS Self Concept Referents Test

Final Data (Spring 1968)

Negative Responses

Philadelphia N=34

Head Start Center	Number of Pupils	Negative feelings toward self expressed by subjects		Perceptions of others' negative feelings toward self	
		Mean	Range	Mean	Range
First African					
All day class	7	3.00	0-7	6.00	0-14
All day class	7	2.00	0-4	5.57	3-13
Total First African	14	2.50	0-7	5.78	0-14
Cornerstone					
All day class	6	1.67	1-3	3.67	0-10
Morning class	4	2.50	0-7	7.00	2-19
Total Cornerstone	10	1.90	0-7	5.00	0-19
St. Phillip's					
All day class	6	4.50	1-11	9.67	4-21
Morning class	4	6.50	1-11	14.00	6-23
Total St. Phillip's	10	5.30	1-11	11.40	4-23
Total Philadelphia	34	3.15	0-11	7.21	0-23

Table 34

Brown IDS Self-Concept Referents Test

Final Data (Spring 1968)

Negative Responses

Appalachia N=10

Head Start Center	Number of Pupils	Negative feelings toward self expressed by subjects		Perceptions of others' negative feelings toward self	
		Mean	Range	Mean	Range
Barbourville					
All day class	5	.80	0-2	.80	0-2
Rosenwald					
All day class	5	3.20	1-5	5.00	1-9
Total Appalachia	10	2.00	0-5	2.90	0-9

Table 35

The Play Situation--Picture Board Sociometric Technique

Initial Data (Fall 1967)

Children's Peer Choices in Play Situations

Philadelphia N=42

Head Start Center	Number of Pupils	Peer Choices in Five Play Situations			Peer Choices for Most Desirable Playmate		
		Same Sex Peers	Opposite Sex Peers	Total Choices	Same Sex Peers	Opposite Sex Peers	Total Choices
First African							
All day class	8	13	5	18	1	1	2
All day class	8	12	11	23	3	1	4
Total First African	16	25	16	41	4	2	6
Cornerstone							
All day class	6	11	6	17	3	1	4
Morning class	4	5	1	6	1	1	2
Total Cornerstone	10	16	7	23	4	2	6
St. Phillip's							
All day class	7	12	10	22	4	2	6
Morning class	9	19	14	33	4	3	7
Total St. Phillip's	16	31	24	55	8	5	13
Total Philadelphia	42	72	47	119	16	9	25

Table 36

The Play Situation--Picture Board Sociometric Technique

Initial Data (Fall 1967)

Children's Peer Choices in Play Situations

Appalachia N=8

Head Start Center	Number of Pupils	Peer Choices in Five Play Situations			Peer Choices for Most Desirable Playmate		
		Same Sex Peers	Opposite Sex Peers	Total Choices	Same Sex Peers	Opposite Sex Peers	Total Choices
Barbourville							
All day class	4	4	2	6	0	0	0
Rosenwald							
All day class	4	1	3	4	0	0	0
Total Appalachia	8	5	5	10	0	0	0

Table 37

The Play Situation--Picture Board Sociometric Technique

Final Data (Spring 1968)

Children's Peer Choices in Play Situations

Philadelphia N=37

Head Start Center	Number of Pupils	Peer Choices in Five Play Situations			Peer Choices for Most Desirable Playmate		
		Same Sex Peers	Opposite Sex Peers	Total Choices	Same Sex Peers	Opposite Sex Peers	Total Choices
First African							
All day class	8	12	13	25	3	3	6
All day class	7	12	5	17	4	0	4
Total First African	15	24	18	42	7	3	10
Cornerstone							
All day class	6	13	2	15	2	1	3
Morning class	4	1	5	6	2	0	2
Total Cornerstone	10	14	7	21	4	1	5
St. Phillip's							
All day class	5	14	0	14	3	0	3
Morning class	7	10	3	13	1	0	1
Total St. Phillip's	12	24	3	27	4	0	4
Total Philadelphia	37	62	28	90	15	4	19

Table 38

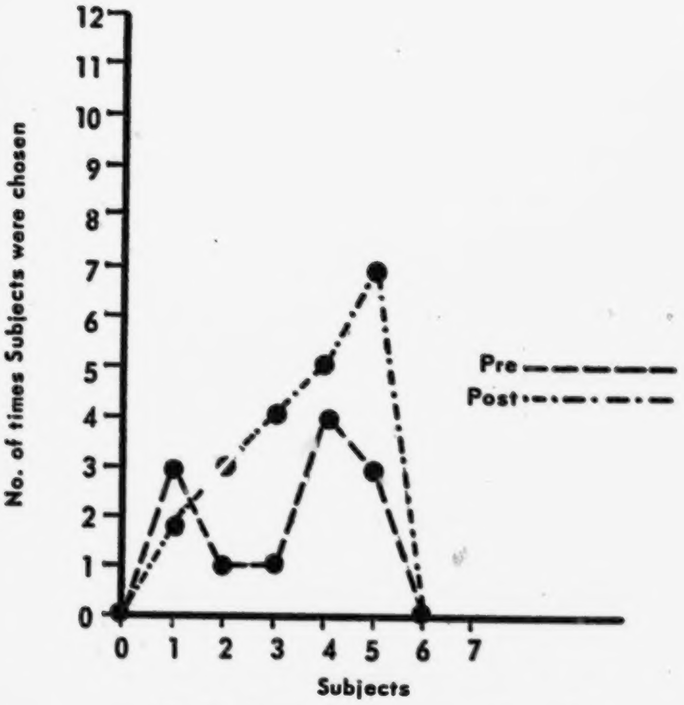
The Play Situation--Picture Board Sociometric Technique

Final Data (Spring 1968)

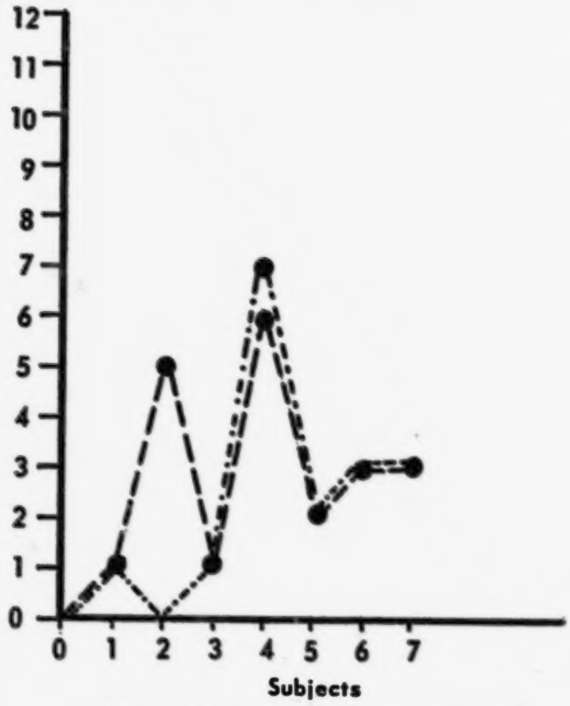
Children's Peer Choices in Play Situations

Appalachia N=10

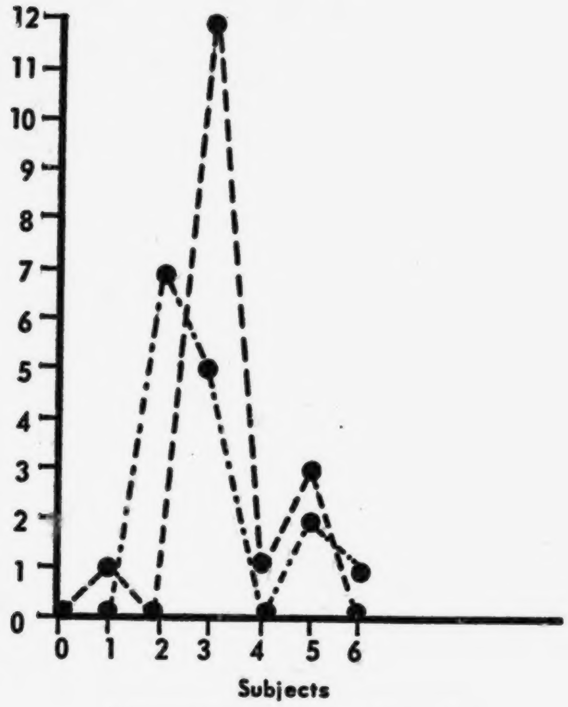
Head Start Center	Number of Pupils	Peer Choices in Five Play Situations			Peer Choices for Most Desirable Playmate		
		Same Sex Peers	Opposite Sex Peers	Total Choices	Same Sex Peers	Opposite Sex Peers	Total Choices
Barbourville							
All day class	5	2	2	4	2	0	2
Rosenwald							
All day class	5	4	4	8	0	2	2
Total Appalachia	10	6	6	12	2	2	4



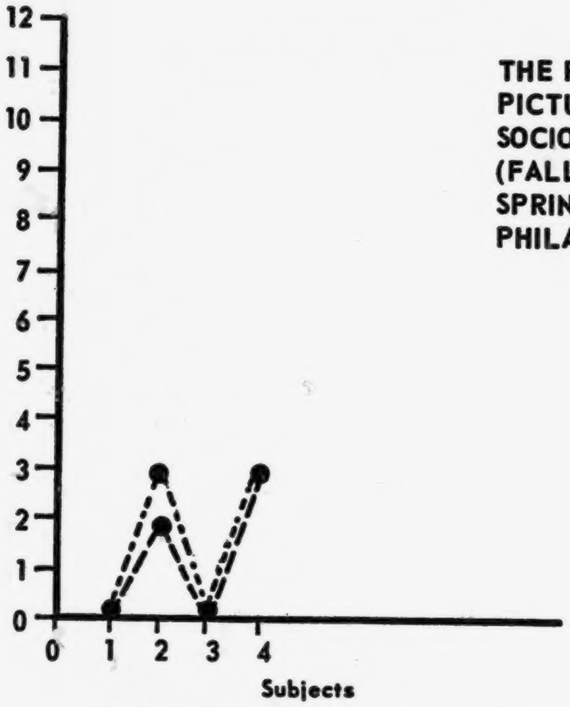
(First African Presbyterian – Class 1)



(First African Presbyterian – Class 2)



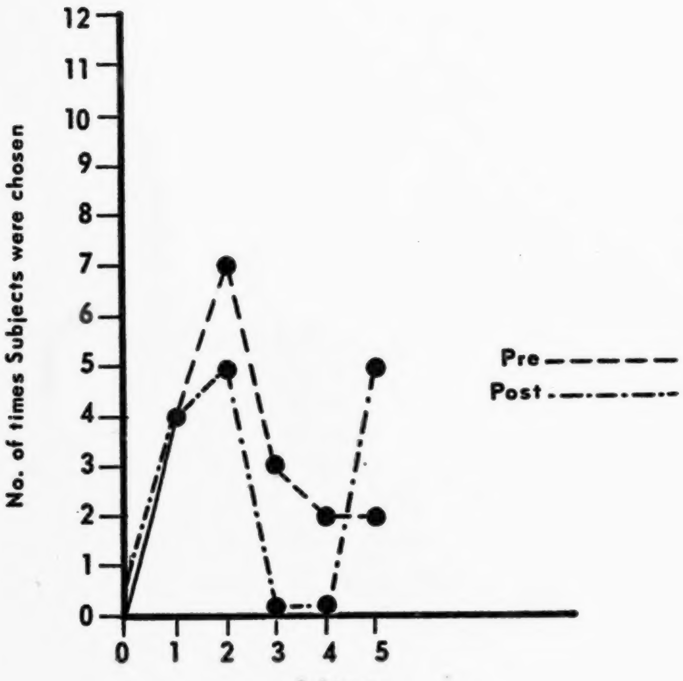
(Cornerstone Baptist – Class 1)



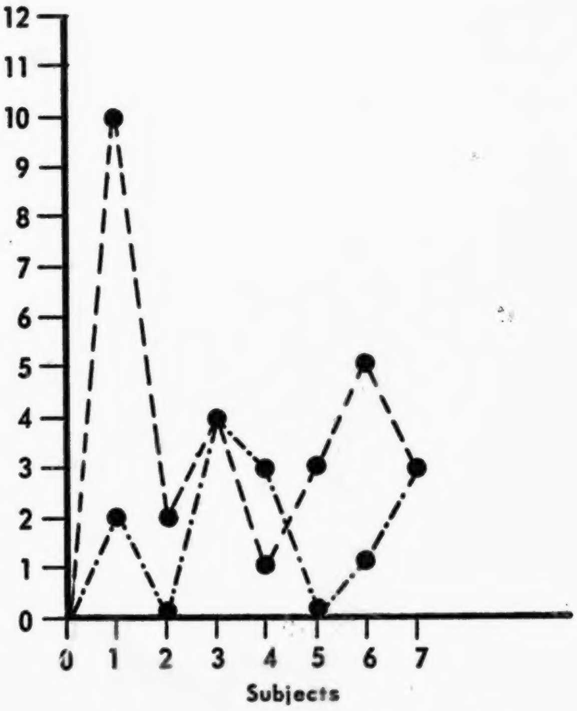
(Cornerstone Baptist – Class 2)

**THE PLAY SITUATION
PICTURE BOARD
SOCIOMETRIC TECHNIQUE
(FALL 1967 AND
SPRING 1968 DATA)
PHILADELPHIA SAMPLE**

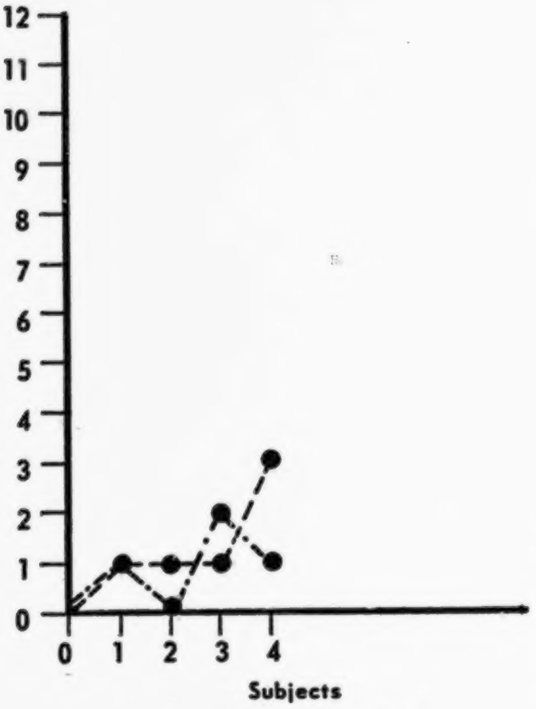
THE PLAY SITUATION PICTURE BOARD SOCIOMETRIC TECHNIQUE (FALL 1967 AND SPRING 1968 DATA) APPALACHIA SAMPLE



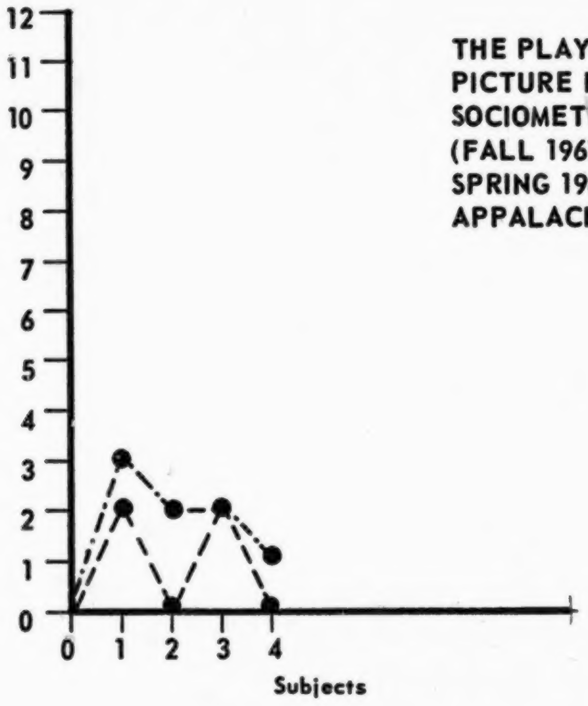
(St. Phillip's Evangelical – Class 1)



(St. Phillip's Evangelical – Class 2)



(Barbourville Center)



(Rosenwald Center)

Table 39

Mother-Child Interaction Tasks

Initial Data (Fall 1967)

Mother-Child Interaction in Toy Sorting Task

Philadelphia N=29

Head Start Center	Number of Pupils	Verbal Responses of Mother to Child			
		Positive		Negative	
		Mean	Range	Mean	Range
First African					
All day class	9	14.89	3-36	4.55	1-31
All day class	4	9.25	5-18	5.25	4-8
Total First African	13	13.15	3-36	8.76	1-31
Cornerstone					
All day class	5	34.20	11-80	3.60	0-6
Morning class	4	13.50	6-21	6.70	3-9
Total Cornerstone	9	24.88	6-80	5.00	0-9
St. Phillip's					
All day class	2	5.50	1-10	7.00	0-14
Morning class	5	13.00	0-30	9.00	3-21
Total St. Phillip's	7	10.85	0-30	8.42	
Total Philadelphia	29	16.28	0-80	7.51	0-21

Table 40

Mother-Child Interaction Tasks

Initial Data (Fall 1967)

Mother-Child Interaction in Toy Sorting Task

Appalachia N=10

Head Start Center	Number of Pupils	Verbal Responses of Mother to Child			
		Positive		Negative	
		Mean	Range	Mean	Range
Barbourville					
All day class	5	9.00	1-20	3.40	1-9
Rosenwald					
All day class	5	5.80	1-14	7.80	0-28
Total Appalachia	10	7.40	1-20	5.60	0-28

Table 41

Mother-Child Interaction Tasks

Final Data (Spring 1968)

Mother-Child Interaction in Toy Sorting Task

Philadelphia N=33

Head Start Center	Number of Pupils	Verbal Responses of Mother to Child			
		Positive		Negative	
		Mean	Range	Mean	Range
First African					
All day class	9	6.00	1-16	7.00	0-14
All day class	5	22.20	8-36	8.40	0-15
Total First African	14	11.78	1-36	7.50	0-15
Cornerstone					
All day class	6	19.83	2-57	5.66	0-18
Morning class	4	14.25	2-19	3.00	0-7
Total Cornerstone	10	17.60	2-57	4.60	0-18
St. Phillip's					
All day class	4	16.00	2-39	6.75	2-15
Morning class	5	7.20	5-15	3.80	0-9
Total St. Phillip's	9	11.11	2-39	5.11	0-15
Total Philadelphia	33	13.36	1-57	5.96	0-18

Table 42

Mother-Child Interaction Tasks

Final Data (Spring 1968)

Mother-Child Interaction Toy Sorting Task

Appalachia N=10

Head Start Center	Number of Pupils	Verbal Responses of Mother to Child			
		Positive		Negative	
		Mean	Range	Mean	Range
Barbourville					
All day class	4	2.75	0-5	4.75	1-15
Rosenwald					
All day class	4	4.25	3-6	4.75	1-12
Total Appalachia	8	3.50	0-6	4.75	1-15

Reports of Faculty Studies

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The following is an abstract of a research report from the Center which was published in The Journal of Psychology, 1968, 68, 215-221.

The Language of Children in the "Inner City"

Alexander, Theron; Stoyle, Judith; and Kirk, Charles

The subjects in this study (52 girls, 66 boys) are predominantly three and four-year-old children living in dire conditions of urban decay. The investigation concerns picture vocabulary scores obtained at the beginning and end of the school year (Head Start). It was found that there was a significant sex difference in vocabulary in favor of boys. It was also found that while a significant change in vocabulary was encountered over the school year for the entire group, the relative difference between the sexes was maintained. The information obtained suggests that if the deficiency of girls in vocabulary is to be overcome, measures for specific help must be undertaken. (Psychological Abstracts, 1968, 42, June).

Research report on 1967-68 data
to be published in a professional journal

Abstract of Research Report

CHANGING THE MENTAL ABILITY OF CHILDREN IN THE CITY

Theron Alexander and Judith Stoyle
Child Development Research and Evaluation Center for Head Start
Temple University

Three questions were asked in this research. (1) How do the IQ's of children from an urban slum compare with the normative distribution of the Stanford Binet? (2) Is there improvement in their scores by the end of the school year, and if so, is there a sex difference? (3) Is the greatest improvement to be found in the abilities of children who have initially lowest or highest scores?

The subjects were 35 negro boys and 33 negro girls in preschool programs for deprived children. Subjects were given the Stanford-Binet Intelligence Scale in the fall of 1967 and the spring of 1968. The results indicate that while the children were significantly below the mean of 100 at the beginning of the year, at the end of the year they were slightly above the standard. Over the school year the mean of the group increased from a mean of 92.8 to a mean of 101.7. There was, thus, improvement over the year with boys tending to make greater gains through the year than girls. At the end of the year there was no significant difference between boys and girls although there had been a difference at the beginning of the year. The most striking gain was made by children who were below average in IQ.

CHANGING THE MENTAL ABILITY OF CHILDREN IN THE CITY

Theron Alexander and Judith Stoyle
Child Development Research and Evaluation Center for Head Start
Temple University

A. Purpose

An important assumption of a current social program is that a lack of ability to benefit from educational opportunities will continue the cycle of poverty from generation to generation. Part of that assumption is that children growing up under adverse conditions characteristic of deteriorated conditions in crowded urban areas will have so much difficulty in school that before being educated they will leave the educational system. Lacking education they will fail to find a satisfying place in American society and culture. Since our society is increasingly concerned about the large number of people in poverty and about conditions of urban deterioration, a new effort is now being made to improve the likelihood of success of children in school. A number of preschool intervention programs are underway some of which begin at the early age of three. Thus, some children living in poverty now receive three years of preschool education before entering the regular school system.

The purpose of these programs carried on with federal support is to provide learning opportunities of a wide range. Both negative and positive assumptions characterize the programs: (1) very young children developing under adverse environmental conditions will have less ability to meet general problem-solving tasks, particularly such tasks as are similar to those required by the regular school; and (2) intervening programs can change and improve abilities so that when the children do enter school they can perform successfully.

One approach to the investigation of these assumptions would be to use a standardized "mental ability" or intelligence test such as the Stanford-Binet to determine the change in the ability of children in a preschool program. In accordance with the first assumption, children in an urban slum as a group should be found to be lower than "average children" on the test at the beginning of the year since it is assumed that children growing up in deprived areas will have inadequate experience to help them meet the tasks comprising the test. In accordance with the second assumption, the program should increase the children's capacity to meet the tasks of the test and thus perform at a significantly higher level after being in the program for the school year.

Another point of interest relates to individual differences: which children improve the most as a result of the intervening programs--those who have the lowest test scores at the beginning of the program or the highest?

In view of these goals a number of questions were asked in this study: (1) how do the IQ's of children from an urban slum compare with the normative distribution of the Stanford Binet; (2) is there improvement in their scores by the end of the school year and if so, is there a sex difference; and, (3) is the greatest improvement to be found in the abilities of children who are initially lowest or highest?

B. Method

1. Subjects

The characteristics of the subjects in the study are shown in Table 1. All of the children (35 boys and 33 girls) are Negro and live in conditions of urban deterioration.

2. Procedure

The subjects were given the Binet initially in the fall of 1967. There was an interval of at least five months between the initial and final testing in the spring. Although the initial number of children tested was 95, only 68 were available for the final test and thus were the ones used in this study.

C. Results

First, the results show that at the beginning of the school year the mean IQ (92.8) of the 68 children in the study was significantly below the normative mean of 100 of the Stanford-Binet Scale ($t=5.2$, significant at the .001 level). However, after a year in the program the mean was 101.7 and therefore at that time the group was found to be slightly above the standard.

In regard to the second question as to whether or not there was improvement in IQ over the school year, it was found that there was a change between the mean IQ in the fall of 92.8 and 101.7 in the spring.

There was a tendency for boys to make greater gains than girls and it is to be noted that their mean was initially lower than that of girls. The mean IQ for the boys at the beginning of the year was 89.8 and the mean for the girls was 95.9; a difference significant at the .05 level. At the end of the study the mean for the boys were 99.8 and the mean for the girls was 103.7 and at this time there was not a significant difference between boys and girls.

Information obtained in reference to the third question, that is, the question about the identity of children who gain the most, the data showed that there was a tendency for the children who had the lowest scores to make the greatest gain. For example, approximately six percent of the children in the sample were initially in the above average range (110 or above) but at the end of the year nearly 18 percent were in the above average range. The most striking gain was made by children who were below average in IQ (approximately 41 percent) in that on the average their IQ increased by nearly 14 points. While the number of children who could be categorized in the above average range increased, it should be noted that there was a tendency for the children who were the highest at the beginning of the school year to decrease in IQ on the average of about three points.

D. Discussion

The very young children [average age, three years old (44 months)] were studied at the beginning of a program to provide them with experiences to extend their awareness of the world about them. Despite the fact that they live along the eastern coast in a section where there is the greatest concentration of the world's economic, social, and political power, they are isolated and limited in experience. They are a product of an unevenness of social and economic evolution. Their plight is, of course, not new in that there has been social dislocation since cities were first erected, but because much progress has been made in modern societies without substantial benefit to them, they are currently of much more concern than at any other time.

The goal of aiding them to find a place in society by additional educational experience, however, needs to be in some perspective. As valuable as most social and behavioral scientists deem additional educational experience in the early years to be, the effect of the experience is not easy to determine. The establishment of the significance of change on the Binet, for example, involves theoretical, statistical, and practical considerations. It is clear, however, from the results included here that there is a tendency for the children to improve in their ability to perform the tasks of the test. To this extent then the experience in Head Start has been beneficial.

TABLE 1

Age Means and Ranges in Months for Subjects at Beginning of Study

(Fall 1967)

Sex	N	Mean	Range
Male	35	45.3	39-59
Female	33	42.8	37-55
Total	68	44.1	37-59

TABLE 2

Comparison of Initial and Final IQ

Testing Period	N	Mean	Range	SD
Boys				
Fall (Initial)	35	89.8	68-105	9.1
Spring (Final)	35	99.8	79-118	9.5
Girls				
Fall (Initial)	33	95.9	75-130	12.9
Spring (Final)	33	103.7	89-135	10.2
Total Fall	68	92.8	68-130	11.4
Total Spring	68	101.7	79-135	9.9

TABLE 3

Categorization of Initial IQ and Change over Year

IQ Category	f	Average Change in IQ Points	
130-139	1	-4.0)	-3.0
120-129	1	10.0)	
110-119	2	-9.0)	
100-109	12	3.3)	6.5
90-99	24	8.1)	
80-89	21	11.8)	13.6
70-79	5	20.4)	
60-69	2	16.5)	

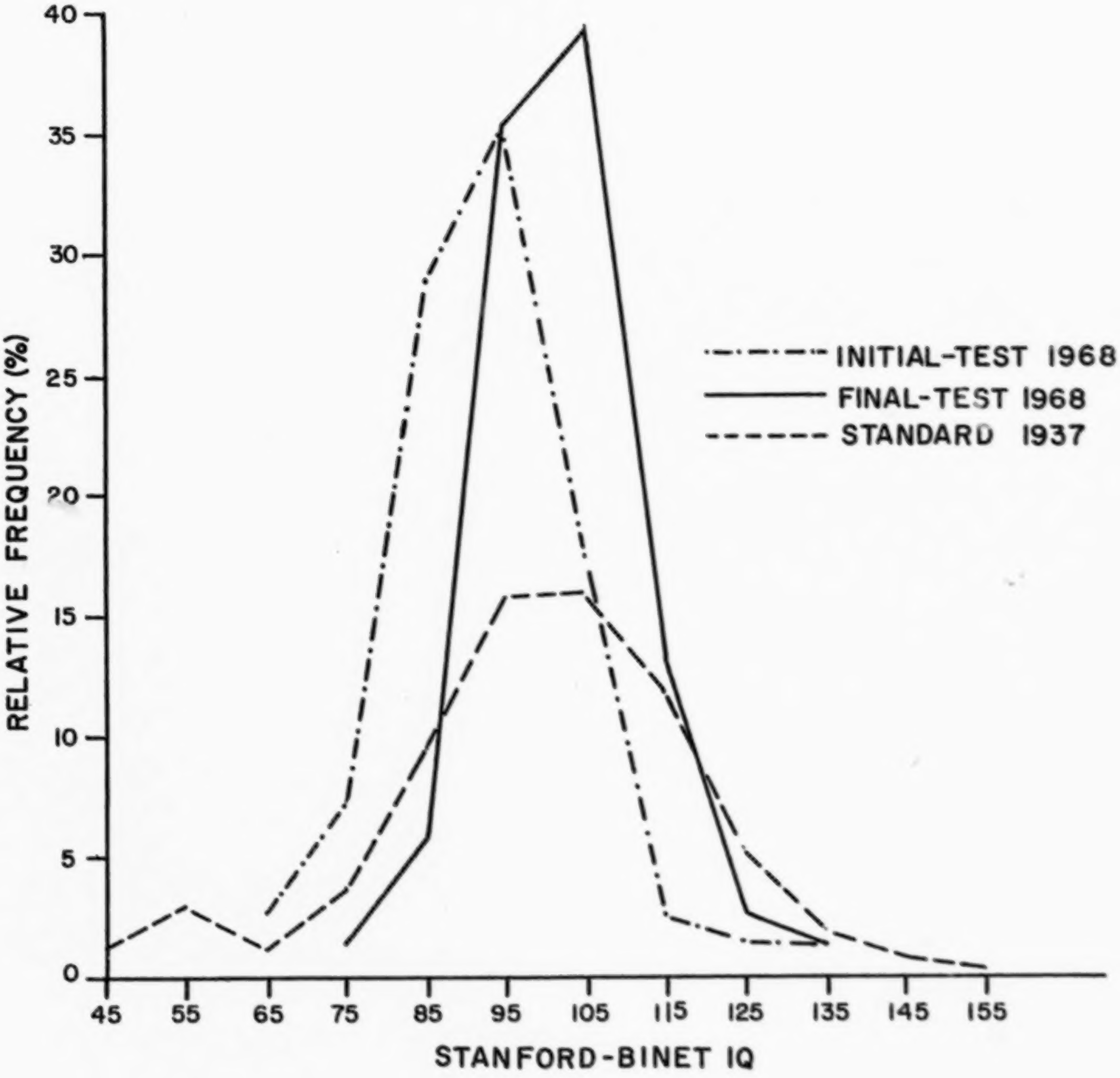

Figure 1. Frequency distributions of Stanford-Binet initial and final tests IQ for total sample. (The total number of subjects in this study was 68). Chi-square goodness-of-fit tests were done to compare the initial and the final distributions to the 1937 standard for the Binet (Terman, L. M. and M. A. Merrill, Stanford-Binet Intelligence Scale (Manual). Boston: Houghton-Mifflin, 1960.) (χ^2=32.9, p .01 for the initial test; χ^2=23.9, p .05 for the final test).

Project I

INCREASING CHILDREN'S ACHIEVEMENT-ORIENTED BEHAVIOR IN NURSERY SCHOOL

Eugene Stivers

Associate Professor of Educational Psychology

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Abstract

This research project subjected thirteen Head Start boys and girls to fifty-one days of achievement training complemented by achievement orientation for their mothers. The input was of four types: goal setting, achievement language, task feedback, and reinforcement for success. Use of two measures of achievement-oriented behavior showed statistically insignificant changes by the experimental group when compared with a control group of thirteen closely matched Head Start children.

Further research with similar short-term input is planned on larger groups of children who demonstrate no more than a moderate level of achievement-oriented behavior at the outset, using a more sensitive instrument refined during the present study.

REPORT

Can the volume of achievement-oriented behavior demonstrated by urban nursery-school children be heightened through short-term training? This question is worth investigating for practical and theoretical reasons. Selection of proper goals and energetic persistence in their pursuit are important factors in school achievement. Many urban children are considered lacking in this kind of motivation, as compared with suburban children. If the deficiency can be removed through training, a breakthrough in compensatory education will have been made and important knowledge about the evidence and measurement of achievement orientation gained.

The investigation reported in this paper is primarily an extension of the theoretical and applied research of McClelland (1965), Rosen (1959), Atkinson (1966), and Alschuler (1968). McClelland describes seven input variables designed to increase achievement motivation and related actions. These may be summarized under the headings: goal setting, acquisition of achievement language, feedback from task, and personnel and group support. Rosen specifies the role of a mother as she accomplishes these inputs in child rearing. Atkinson supplies a general formula relating total achievement-oriented behavior to personal achievement motive and social situational factors. Alschuler offers programmatic details about heightening achievement-oriented behavior in adolescent boys and girls.

The author's research was an effort to extend previous work through a focus on some details of general principles and their application to younger subjects.

The hypothesis of the study was: Short term "achievement training" of a small group of urban nursery-school children, complemented by "achievement orientation" of their mothers, can significantly raise the volume of their achievement-oriented behavior, as contrasted with the effect of nursery school alone on the achievement-oriented behavior of a control group of children.

Method

This study is the first of a series planned to develop a program to increase the achievement-oriented behavior of urban nursery-school children. The strategy of the series is similar to that of the McClelland projects (McClelland, 1965). The treatment is maximized in the first effort, in order to make the probability of significant output high. Subsequent analytical studies lead to subtraction, or addition, of elements until a minimum program of specific, reliable treatment has been developed.

The setting was a Philadelphia Head Start Center located in a lower-middle to upper-lower class neighborhood of mixed racial composition. Thirty-five of the forty children enrolled in the regular classrooms of the Center were administered the Stanford-Binet Intelligence Scale Form L-M. Thirteen matched pairs of children were then formed according to sex, color, age, and I.Q. On the basis of coin-tosses very closely matched experimental and control groups were made, drawn from each of the three regular teacher's rooms. (See Table 1).

The experimental treatment consisted of "achievement orientation" given to the mothers of the experimental subjects and "achievement training" given directly to the experimental children.

During the second and third weeks of March, the mothers met for nine hours in three separate sessions. The achievement orientation for them had three aspects: (a) the purposes of the research project were given, (b) the findings of Rosen regarding the child-training behavior of mothers of sons with high achievement motive were explained in lay terms, and McClelland's film "Need for Achievement" was shown, and (c) the techniques of helping a child carry out achievement-oriented behavior were demonstrated and practiced.

From the last week of March until the third week of June, the achievement training was administered to the children in the experimental group. Each school day they came to a room in the Center prepared especially for the training, while their classmates were in recess from the regular Head Start activities. Thirty minutes each day, for fifty-one days, an experienced nursery-school teacher and her graduate-student assistant, both trained in the theory and practice of assisting children to accomplish achievement-oriented behavior, administered four types of treatment: (a) the two women acted as mothers who help children set achievement goals of moderate risk, (b) they used language helpful to achievement in their conversations with the children, (c) they conveyed feedback from task efforts to the children, and (d) they gave reinforcement for success in goal achievement and arranged group support among the children.

The outcome, achievement-oriented behavior, was generally defined as children's behavior that contributes to achievement: (a) selection of an achievement task (as opposed to a superficial, impossible, or irrelevant task), and (b) the energetic, persistent pursuit of the selected task. Two instruments were used to collect data about the level of achievement-oriented behavior from the experimental and control groups, before and after the treatment. The Beanbag Toss, a variation of the Ring Toss used with success by McClelland and associates (Atkinson, 1958, Chapter 21) offers the subject ten chances to throw a beanbag into a wastebasket from distances of his own choosing. Scoring procedures note numbers of throws, concentration of throws at given distances, and successes. The Aronson Graphic Expression Measure of Need for Achievement (Atkinson, 1958, Chapter 17) presents the subject briefly with two doodle designs which he is asked to reproduce or simulate. Count of "discrete" and "fuzzy" elements in the graphic expression produces a score whose relation to directly observed achievement-oriented behavior has been demonstrated (Atkinson, 1958, Chapter 21). In addition to the regular post-testing, one year from the termination of the treatment a follow-up testing will be made using the same two instruments and other evidences of achievement-oriented behavior. (See Figure 1).

Two weeks were spent, before the start of the fifty-one days of treatment, entirely in picture-taking and other social activities designed to get acquainted with the experimental subjects and establish them as a group. Considerable time was also spent during the first few weeks of the treatment period in giving general encouragement to the children and bringing about a group capable of supporting one another. By the middle of the treatment period, each day's session consisted of the full range of achievement training activities.

The treatment room was furnished with a large table, three small tables, and a rug for activity centers. The walls were hung with some colorful pictures, snapshots of the children and trainers, a mirror, and progress charts with graduated sizes of stars. Boxes and shelves contained a variety of achievement-task equipment featuring jigsaw puzzles, a game that connected the arms and tails of a series of monkeys, large hollow blocks, wooden cubes, a peg board, Tinker Toys, and City Construction Kit, and a beans-in-the-cup game. A typical session consisted of welcoming activities, group achievement activities, and individual achievement activities. An illustrative section from a day's lesson plan reads: (a) Nature of task; building tall towers, (b) Materials; wooden cubes, (c) Objectives; the four classes of achievement training input, (d) Activities; pupils in small groups, and alone, given following instructions: "Today we are going to play a game of building tall towers." "Who thinks he (she) can do it?" "Who thinks he can build a tall tower?" After the children have finished the task: "Who built the tallest tower?" "How many blocks did you use?" "Who used the most blocks in his tower?" "Good for you!" "Let's clap our hands for ________." "Now, who used the least number of blocks?"

"Let's see why." "Would you like to try again?" (M & M candy and gold stars may also be given for achievement-oriented behavior), (e) Evaluation; using anecdotal records, teacher log, and progress charts.

Results

The results of the statistical treatments of data collected using the two instruments with the experimental and control groups, before and at the end of the treatment, are summarized in Table 2 and Table 3.

These statistical treatments of the data from the Beanbag Toss and Graphic Design assessments (Table 2 and Table 3) indicate that the experimental hypothesis is rejected for the period from the pre-testing to first post-testing. The volume of achievement-oriented behavior shown by the experimental and control children has remained about the same over the period of treatment. The similarity of curves in Figure 2 illustrates this general result.

The conclusion is that the treatment in this project has not been effective in significantly heightening the volume of achievement-oriented behavior, by the time of the end of the treatment period. The question of whether the treatment will be effective after a longer period of time has passed waits for its answer on the assessment to be done in the follow-up next year.

Examination of information collected in the study does offer examples of children who demonstrate a high level of achievement-oriented behavior. For example, W. M. is a lively girl, four years ten months old, colored, with an IQ of 107. Her scores on the Graphic Design and Beanbag tests are moderate to high, showing a small positive change from pre- to post-testing. Her designs consisted mostly of sweeping horizontal and curved elements, made with rapid slashing movements. On the Beanbag pre-testing, she started her tosses at two feet from the basket and gradually moved out to four feet, missing only once. At the end of the treatment period she started her tosses successfully at three feet, moved out to five feet where she missed a few, then moved back to successful tosses at three feet. During the project training sessions from March to June, her personal goal-setting on the block piling moved gradually from seven up to twenty-five (maximum) blocks piled on one another, with successes closely following behind goals. Sample observation of her free behavior in the regular Head Start classroom during June, using the Kowatrakul Behavior Categories (Kerlinger, 1965; Kowatrakul, 1959) showed 50 percent (high) of her time in achievement-oriented categories. Sometimes she was an enterprising youngster, and had to be reproved now and then for taking extra turns at a game in order to win. One trainer wrote of her in May: "She ran up onto my back and then on my lap and scrambled to the floor with the Tinker Toys. Said, 'Rock me, sing.' I sang Rock-A-Bye-Baby and made her a Tinker Toy bottle. She sucked on it. As I began to help some other child, she recaptured my attention by hanging on to me. She ran to pile the blocks and I kept a count of how many she piled. At first she made a small pile and knocked them over. After making eighteen, she asked, 'I get a tiny star, right?' She did and when she chose to do nineteen for her next trial she remarked, 'I get a tiny star if I do that one?' Then she drew some stars of her own on the paper I was taking notes on. The other trainer summarized W.'s behavior: "She was a clinging, somewhat demanding young lady who wanted considerable individual attention, seeking it mainly through physical contact. This general pattern was present throughout the period, but began to lessen in the last few weeks. With this change also came more attention to the tasks presented. She had begun to attend, to work, to complete tasks, to share the attention of the trainers, and to enjoy the success of other children."

D. R. illustrates a low level of achievement-oriented behavior. A personable boy, four years five months old, colored, with an IQ of 99, his scores on the Graphic Design test were low at both pre- and post-assessment. His first Beanbag Toss also yielded a low score. Starting his throws at eight feet from the basket, he quickly increased this to ten feet, and then eleven, missing every time. He broke his arm shortly before the Beanbag post-testing. During the project training sessions he consistently set very high goals for himself in block piling, starting at twenty, dropping to fifteen for a time, then shooting to the maximum of twenty-five, although he never was successful at piling more than fourteen and averaged about ten. Sample observations of his free behavior in the regular Head Start classroom during June, using the Kowatrakul Behavior Categories, show 25 percent (low) at this time in achievement-oriented categories. The trainers wrote of him: "D. was a 'little boy' throughout the sessions. He was a child who needed physical contact and worked best with it. There were several occasions when this young man was very unhappy about the whole situation. He showed this through whining, crying, or angry outbursts. Often he verbally copied the others. When someone would say, 'I have this or that at home' or 'I have done this or gone there', D. generally echoed, 'Me too' with a grin on his face, his eyes following the details of the other child's story. He worked, but not consistently. It would depend on his mood of that day."

Discussion

Failure of the project to achieve a significant heightening of achievement-oriented behavior during the four months of treatment may be attributed to input which is ineffective as such, or to disadvantages of research design. The latter explanation is favored.

Until a more sophisticated trial of the short-term treatment of this project can be made, it is premature to turn to longer input and/or one of a different composition.

It is possible that the follow-up testing, one year from now, will reveal significant gains in achievement-oriented behavior for the present experimental group. It is more likely that a second and third more experienced study of larger samples of children all of whom are of the lower social class, will be successful. A particular advantage of subsequent studies will be the use of the revised Kowatrakul Behavior Categories for systematic assessment of gradual gains in volume of specific achievement tactics which may be shown by a child in free classroom situations. Trainers in the present study reported positive change in particulars of achievement-oriented behavior (in contrast with more general strategy which did not show much change) but lacked instruments to record this growth objectively. The instrument's use for this purpose has been refined during the project. (Descriptions of the original form are given by Kerlinger (1965) and Kowatrakul (1959).)

Subsequent research must be sure to secure samples of children with medium to low levels of achievement-oriented behavior. In order to concentrate its moderate resources on a single Head Start Center with a group of at least forty children, the present study found it necessary to accept one in an upper-lower to lower-middle class community. (Centers in more disadvantaged communities had fewer children enrolled). The children's mothers seemed to demonstrate upward-mobile and middle-class behavior, including perfect attendance of the women (and one father) at the mothers' achievement-orientation meetings. In particular, the children as a group got scores and demonstrated patterns of action typical of persons with a rather high level of achievement-oriented behavior, at the time of pre-testing. This fact alone may explain the failure of experimental-group scores and patterns to improve significantly over the period of treatment:

Their achievement orientation was already fairly high. For instance, their pre-test curve in Figure 2 shows that about two-thirds of the throws they made are concentrated in the middle distance of three feet to eight feet, where there is moderate probability of success (average .45). This is considered to be characteristic of persons with a high achievement orientation (Atkinson, 1958, Chapter 21).

Summary

This research project subjected thirteen Head Start boys and girls to fifty-one days of achievement training complemented by achievement orientation for their mothers. The input was of four types: goal setting, achievement language, task feedback, and reinforcement for success. Use of two measures of achievement-oriented behavior showed statistically insignificant changes by the experimental group when compared with a control group of thirteen closely matched Head Start children.

Further research with similar short-term input is planned on larger groups of children who demonstrate no more than a moderate level of achievement-oriented behavior at the outset, using a more sensitive instrument refined during the present study.

References

Alschuler, A. A. Psychological Education. Manuscript of book in preparation. Cambridge, Massachusetts: Harvard University Graduate School of Education, 1968.

Atkinson, J. W. (Ed.) Motives in Fantasy, Action, and Society. Princeton, New Jersey: D. Van Nostrand, 1958. Pp. 306-321 (Chapter 21), pp. 249-265 (Chapter 17).

Atkinson, J. W., and Feather, N. T. Theory of Achievement Motivation. New York: John Wiley and Sons, 1966.

Kerlinger, F. N. Foundations of Behavioral Research. New York: Holt, Rinehart and Winston, 1965. Pp. 521-522.

Kowatrakul, S. Some Behavior of Elementary School Children Related to Classroom Activities and Subject Area. Journal of Educational Psychology, 1959.

McClelland, D. C. Toward a Theory of Motive Acquisition. American Psychologist, 1965, 20, 321-333.

Rosen, B. C. The Psychosocial Origins of Achievement Motivation. Sociometry, 1959, 22, 185-195, 215-218.

Table 1

Descriptive Characteristics of Subjects

Group	Sex		Color		C.A.	I.Q.	Head Start[a] Teachers
	♂	♀	C	W	Mean	Mean	
Experimental	8	5	8	5	4-9	98	A(5), B(4), C(4)
Control	8	5	8	5	4-8	99	A(3), B(3), C(7)

[a] The groups were composed of children from three classrooms

Table 2

Results of Pre- and Post-Treatment Assessment,

Level of Achievement-Oriented Behavior in Beanbag Toss

Group	Pre-Score[a] Mean	Post-Score Mean	Rank Order[b] of Gain Sum	df	Kruskall-Wallis H
Experimental	1.64	1.83	189	1	.49(N.S.)*
Control	1.61	1.52			

[a] Score = average distance of ten throws X probability of success at that distance from the basket. Highest pre-score = 2.60, lowest pre-score = 0.97.

[b] Rank 1 is least gain, rank 26 the greatest

*$.30 < p < .50$

Table 3

Results of Pre- and Post-Treatment Indirect Assessment,

Level of Achievement-Oriented Behavior, Graphic Design Measure

Group	Pre-Score[a] Mean	Post-Score Mean	Rank Order[b] of Gain Sum	df	Kruskall-Wallis H
Experimental	3	4	185	1	.24(N.S.)*
Control	7	6	166		

[a] Score is average from two designs, blind scored. Highest pre-score = +38, lowest pre-score = -13.

[b] Rank 1 indicates least gain, rank 26 the greatest gain.

*$.50 < p < .70$

Figure 1. Illustration of experimental design to heighten achievement-oriented behavior in a group of urban nursery-school children.

Subjects	Descriptive Information	Pre-test Data	Treatment	Post-test Data (immediately after treatment ends)	Follow-up Information (after 1 yr.)
					Achievement-orientation level
Experimental group (N=13)	Age Sex Color Binet IQ	Beanbag Toss Aronson Test of Graphic Expression	"Achievement training of children and "Achievement orientation" of mothers Nursery School	(same measures as in pre-test)	(same measures as in pre-test) and Kowatrakul Observation Categories, school marks, hobbies, favorite animals, use of leisure, mobility, dreams, wishes, stories invented and the like
Control group (n=13)			Nursery School only		

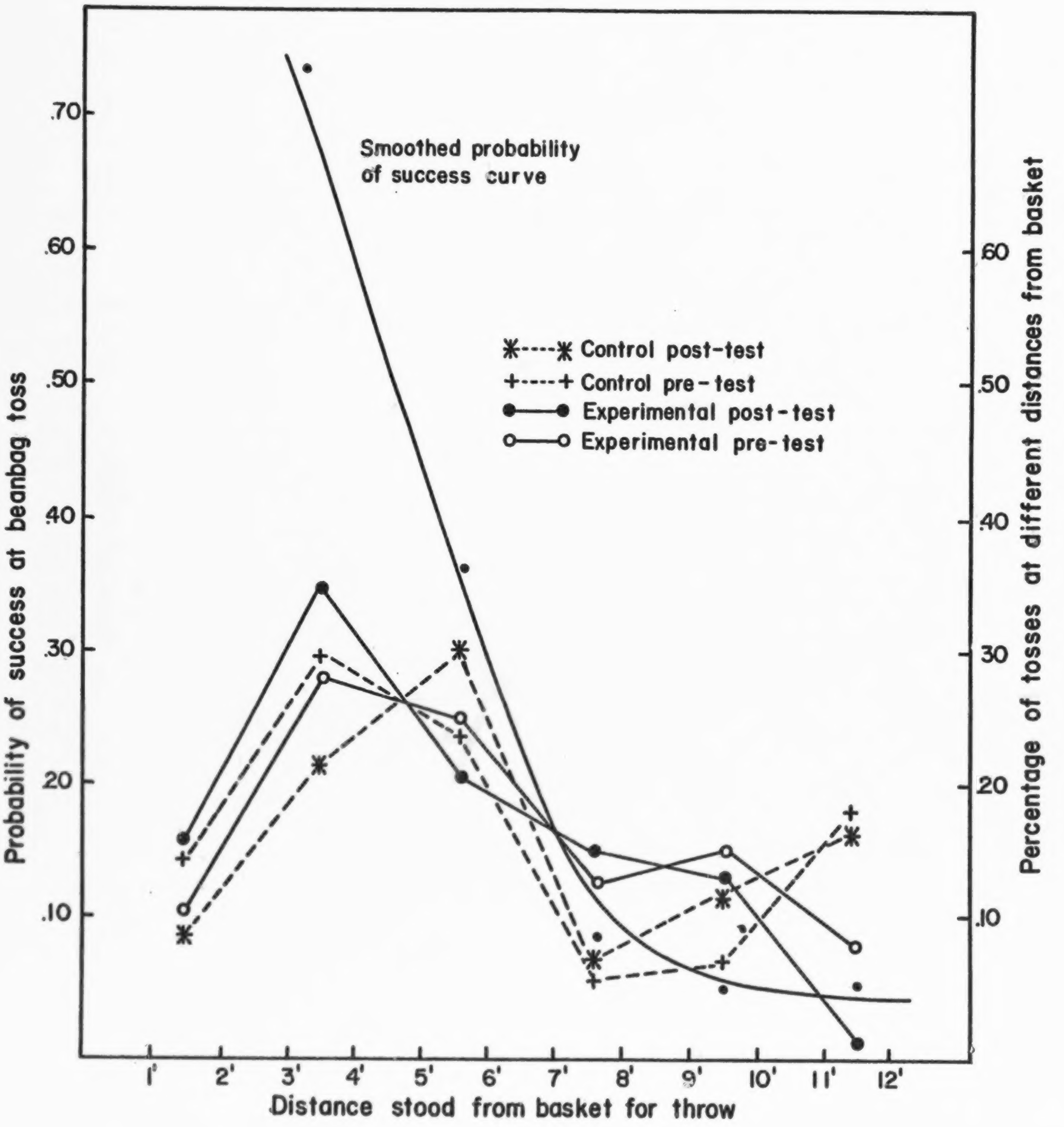

Fig. 2. Percentage of throws made by experimental and control children at different distances from the wastebasket in pre- and post-treatment assessment, and smoothed curve of probability of success at those distances. 13 Ss in each group, 10 throws each time. Plotted at midpoints of intervals beginning with closest distance stood (1' and 2' shots plotted at 1½, 3' and 4' shots plotted at 3½, etc.)

Project II

A STUDY OF FAMILY INFLUENCES ON THE EDUCATION OF WHITE LOWER-CLASS CHILDREN

Robert R. Bell
Associate Professor of Sociology

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Abstract

This study is concerned with some values held by mothers with regard to the Head Start program as related to both their children and themselves. The study is further interested in some patterns the mothers follow in rearing their children and some of their hopes for their children's futures. This study is based on the use of a questionnaire applied to a sample of 41 mothers with children enrolled (Spring, 1968) in the Head Start Program in Barbourville, Kentucky.

In general, our findings were as follows: (1) The mothers were in general quite satisfied with their children's participation and achievements in the Head Start Program. The mothers especially liked the social development they felt their children were achieving through their interaction with the other children. Certainly from the point of view of the mothers, the program was a success. (2) The mothers indicated that they felt that of equal importance to themselves in so far as their children were concerned was the high positive impact of the teacher. (3) It seems clear that what formal education the child achieves will be done almost exclusively within the school because there is very little supportive or

supplementary formal education taking place either in the home or in the community. (4) It is also clear that while many of the women indicate aspriations of educational achievement for their children that they do not in actual fact expect their children to achieve much. For a third of the mothers the most that is expected for their children is a grade school education. (5) The aspirations for their children when they grow up with respect to role models are very simple. They basically hope that their children will grow up to be good and kind and to stay out of trouble.

A. PURPOSE

There has been an increasing interest in recent years in trying to provide children in lower class environments with some means for being able to successfully reach and compete in middle-class American society. One means for doing this has been the Head Start Program and various related approaches. While there has been a great deal of interest, as well as some research directed at what happens to children in Head Start programs, there has been little attention directed at what happens to these children when they are at home or in the community that may have either positive or negative effects on the educational experiences they are getting in school. On the most general level, our study was concerned with what mothers did and felt in areas related to the children's actual experiences in one such program. More specifically, our study has been concerned with some ways in which mothers' values and behavior may influence the formal educational experiences of their children in a particular Head Start program.

We will present our findings as follows: (1) Some values held by the mothers toward the Head Start program related to both their children and themselves, (2) some general beliefs and behavior patterns of the mothers with regard to rearing their children, and (3) role models that the mothers would like to see or not see their sons and daughters emulate when they grow up.

B. METHOD

1. Subjects: The sample of 41 mothers here discussed were taken from lists of mothers with children enrolled (Spring, 1968) in the Head Start

program in Barbourville, Kentucky. The average (median) age of the mothers interviewed was 30.2 years. Each mother had one child in the three to five years of age range who was enrolled in the Head Start program. Ninety-five percent of the mothers had other children. The average number of children for the total mother group was 4.2. The age range of their children was from one to thirty. At the time of the study, 90 percent of the mothers were neither employed full- or part-time outside the home. The mothers had an average (median) of 8.4 years of formal education. Of the married women 79 percent of their husbands had eight years of formal education or less. All of the mothers in the study were white.

2. Procedure: In 1967 a study was carried out in a lower-class Negro neighborhood in Philadelphia with mothers of children in the Head Start program. In the current study the same questionnaire is used with a sample of lower-class white mothers with children in a Head Start program in Kentucky. The questionnaire was developed and pre-tested in 1967 and has 38 general items.

Mothers' Feelings About the Head Start Program

It was the mothers' overwhelming feeling that the Head Start school experience had had a positive and significant influence on their children. When asked about the kinds of influences the school experience was having on their children the most common responses were: 44 percent, "better behaved"; 28 percent "he was showing more interest in more things and activities"; and, 28 percent, "he was learning". In general the common theme suggested by the mothers was that their child was being effectively socialized by his school experience.

The mothers' enthusiastic response to their children being in school is a reflection not only of what the program does for the child, but also the ways that the mother considers the situation as favorable for herself as a person in general and as a mother in particular. To get at this point we asked the mothers two related questions. First, what did they like best about their child being in school, and second what did they like least about their child being in school. To the first question, the mothers responded as follows: 33 percent referred to "the self improvement they could see in their child" and 33 percent mentioned "getting along with other children". With regard to the second question, 37 percent responded "nothing", 40 percent "his being away from home" and the rest such minor complaints as "getting up so early" or "getting him to and from school".

The mothers were also asked to assess their children's feelings about school. Ninety-four percent of the mothers said their children liked school most of the time. Of those mothers, 37 percent felt their child liked school more than did other children of the same age, 59 percent felt it was about the same and only four percent felt it was less.

The mothers were also asked what the child appeared to like the most and least about being in school. What the children liked the most by far was playing with other children, 59 percent. Forty-three percent of the children disliked "naptime" the most. But another 20 percent of the mothers reported that there was nothing their child disliked about school.

It seems clear that the mothers felt that the Head Start Program was doing a good job. Even among the 28 percent who felt the program could do a better job, the reasons given centered around the limitations of the school itself. For example, the need for better physical facilities and more teachers. It appears that the children are happy with their experiences in the Head Start Program, at least as defined by their mothers.

Some General Considerations of Child Rearing

A second part of our study was concerned with some of the patterns of child rearing that were followed in the home by the mother. Some knowledge about child rearing in the home is important not only in itself, but also for how it is related to what is being done in the schools. The analysis of child rearing patterns in the home focused around the mother because this is almost always her responsibility and because in our sample 27 percent of the mothers reported no husband or father present at the time of the interview.

The mothers were asked what they considered to be their greatest problem in bringing up their children. To this question 32 percent mentioned problems of discipline and control and 35 percent said they did not have sufficient money to meet the basic needs of child care and rearing.

The mothers were also asked what they liked the most and the least about being a mother. Two-thirds (69 percent) of the mothers said that what they liked the most about being a mother was "raising their child and watching him grow". Another 13 percent simply said "everything". There were a number of different factors mentioned by the mothers as to what they liked least about being a mother. Most often mentioned (28 percent) were "work too much", 26 percent said "nothing" and 19 percent "no money". While the women mentioned a number of problems in being a mother, none indicated any rejection of motherhood itself.

We were interested in who were the "significant others" in the rearing of the child in the Head Start Program. The child, at this young age, may be influenced by a variety of different individuals. We asked the mothers the following question: "Who do you think has the greatest influence on your child at the present time? Who has the second and third greatest influence?" The mothers named as most important themselves in 65 percent of the cases, the teacher in 18 percent and the father in 11 percent. As second most important, 10 percent of the mothers named themselves, 45 percent the father and 32 percent the teacher. And as third most important, the teacher was mentioned by 46 percent, father by 18 percent and others by 29 percent.

If we put together all three categories of persons mentioned as having either the first, second or third greatest influence on the child, we find that 81 percent of the mothers named the teacher, 79 percent named themselves, the father was named by 62 percent and others by 38 percent. This indicates that statistically the two most important figures were the teacher and the mother.

The mothers were also asked about certain educational functions that were performed in the home with the child. First, the mothers were asked for a rough description of the time spent in a variety of activities by the child during a typical day. The mothers indicate that their children spend about one-half an hour per day doing some work related to school. Sixty-two percent of the mothers say that someone (usually themselves) helps the child with learning at home. Our sample suggests that formal learning takes place in school with little help from the home and practically no help from any other source. The mothers were asked if there was any place besides school, with adults in charge, that their child goes to play or to learn. Fifty-seven percent of the mothers said there were no such places. Almost all who did mention a place referred to Sunday school, but, this was limited to an hour or two every week or so.

The mothers were also asked to indicate their aspirations and expectations for their children's futures. One of the assumptions of the Head Start Program is that by starting the child earlier in school, he is provided with the skills to stay in school longer and participate more effectively. Certainly, today, extended education reaching through the college years is a value shared by most Americans. We asked the mothers how many years of school they would like to see their children receive. To this question 62 percent said a high school education and 38 percent said a college education. But when we asked the mothers how many years of school they actually expected their children would get, 36 percent said a grade school education, 57 percent a high school education and only 8 percent a college education. It is clear for this group of mothers that they have quite low aspirations and even significantly lower expectations.

Role Models for Sons and Daughters

In this section we will look at role models actually known by the mothers. The interest here is in what types of persons, both in their relationships to the respondents and the kinds of characteristics they possess, the mothers would or would not like to see sons and daughters grow up to be like.

Positive Role Models: The mothers were asked "of all the people you actually know or have known who would you like most to have a son grow up to be like?" They were further asked why they selected that person. Their father was most often mentioned (27 percent). The next most commonly mentioned was their grandfather by 23 percent. After those the two most common categories were males in non-family relationships with 23 percent mentioning their minister and 22 percent a teacher or a politician. For the total group of respondents, 38 percent were selected from the immediate family (father, husband, brother, son), 17 percent from secondary relatives (grandfather, uncle, in-laws, cousins) and 45 percent from non-relatives.

As to the reasons given for selecting the role models the vast majority said he was a "good" or "decent" person. It was somewhat surprising that only one woman said her reason for selecting the male model was that he had been a "hard worker".

Positive Female Models: The mothers were asked "of all the people you actually know or have known who would you like most to have a daughter grow up to be like?" They were also asked why they selected that person. Most often mentioned were their own mothers (35 percent), a teacher (31 percent) and herself (12 percent). Here 50 percent of the choices are from the immediate family (mother, sister, self), 12 percent from secondary relatives (grandmother, aunt, in-laws, cousins) and 38 percent from non-relatives.

Two-thirds (66 percent) of the respondents gave as reasons for their choice of female role models for their daughters that she was "nice, good or friendly". Quotes from the mothers further illustrate what they consider to be positive factors. "She constantly helps others" (mother) and "she is kind to everyone" (a teacher).

Negative Male Models: The mothers were asked "of all the people you actually know or have known who would you like least to have a son grow up to be like?" They were also asked their reasons for selecting that person. Most often mentioned was "a neighbor" by 70 percent. Also named were an "uncle" by 25 percent. There were no negative role models from the immediate family, 30 percent from secondary relatives and 70 percent were non-relatives.

The reasons for selection were that 50 percent of the males were "always in trouble". Another 17 percent said they were "mean" and 16 percent that they were "drunks". Some quotes taken from the respondents give a sharper dimension to their feelings about negative role models. "He was mean and no good" (neighbor) and "he's always been in trouble" (uncle).

Negative Female Models: The mothers were asked "of all the people you actually know or have known who would you like least to have a daughter grow up to be like?" And they were asked why they made their choices.

Fifty-three percent named a neighbor or friend, 12 percent her mother and 12 percent said themselves. Twenty-nine percent of those named were in the immediate family, with 12 percent secondary relatives and 59 percent non-relatives.

The respondents gave many different reasons for selecting various women as negative role models. The most common categories were "sexually bad" (40 percent), "lazy and undependable" (28 percent) and "mean" (20 percent). Some quotes are "lots of babies and never been married" (neighbor) and "she's fat and lazy" (friend).

C. RESULTS

With few exceptions the mothers interviewed felt that their children's experiences in the Head Start Program were highly positive and were having a significant influence on their children. The mothers especially liked the social development they could observe in their children and most of the mothers found nothing of real importance that they disliked about their children's experiences in school. Not only were the mothers satisfied but in almost all cases they reported that their children were also happy with being in school. Looking at the Head Start Program from the perspective of the mothers, it is a definite success and what criticisms they give tend to be random and minor.

We were also interested in some of the relationships between child rearing in the home and the more formal aspects of learning in the school. It was clear that being a mother was of great importance to most of our respondents and that their most common problems centered around discipline and the economic problems of rearing their children.

The interrelationship of the importance of the mother in the home and the teacher in the school is reflected in the findings that the mothers perceived themselves and the teachers as having about equal influence on the child.

It is clear that the formal functions of learning take place in the school with not very much help from within the home. But beyond the home there are no significant community agencies that the mothers turn to for help in the formal or informal education of their child.

It is also clear that the mothers are aware of the limitations for their children's futures. This was shown in the finding that while 38 percent of the mothers would like to see their children get a college education only 8 percent think that such will actually happen. And one-third think that a grade school education is the most they can actually except their children to achieve.

When the respondents were asked about models they have actually known, the positive values of "goodness" and "kindness" are stressed for both male and female role models. And not wanting a son to grow up and get in trouble with the law or a daughter to grow up and get in sexual trouble are the two main concerns related to negative adult role models.

D. SUMMARY

This study is concerned with some values held by mothers with regard to the Head Start program as related to both their children and themselves. The study is further interested in some patterns the mothers follow in rearing their children and some of their hopes for their children's futures. This study is based on the use of a questionnaire applied to a sample of 41 mothers with children enrolled (Spring, 1968) in the Head Start Program in Barbourville, Kentucky.

In general, our findings were as follows: (1) The mothers were in general quite satisfied with their children's participation and achievements in the Head Start Program. The mothers especially liked the social development they felt their children were achieving through their interaction with the other children. Certainly from the point of view of the mothers, the program was a success. (2) The mothers indicated that they felt that of equal importance to themselves in so far as their children were concerned was the high positive impact of the teacher. (3) It seems clear that what formal education the child achieves will be done almost exclusively within the school because there is very little supportive or supplementary formal education taking place either in the home or in the community. (4) It is also clear that while many of the women indicate aspriations of educational achievement for their children that they do not in actual fact expect their children to achieve much. For a third of the mothers the most that is expected for their children is a grade school education. (5) The aspirations for their children when they grow up with respect to role models are very simple. They basically hope that their children will grow up to be good and kind and to stay out of trouble.

Project III

Study I	Use of Multiple Criteria to Evaluate Effects on Early Educational Intervention on Subsequent School Performance
Study II	The Effects of Nurturance Deprivation in Lower Class Negro Children
Study III	A Developmental Study of Cognitive Style and Problem-Solving Behavior in Lower and Middle Class Negro Children
Study IV	Teaching Styles and Their Effects on Problem-Solving Behavior in Head Start Programs
Study V	The Teacher-Child Interaction and the Impact of Head Start Programs on Cognitive Development in Disadvantaged Pre-School Children
Study VI	Interacting Effects of Teaching Style and Student Personality Variables on Creativity in Fourth Grade Children
Study VII	An Experimental Study of Teaching Styles and Creativity in Children
Study VIII	Moral and Cognitive Development in Lower Class Negro Children

E. Kuno Beller

Professor of Psychology

ABSTRACT

Our studies which have been carried out in our Developmental Research Laboratory as part of Head Start Research have investigated interrelationships between environmental factors, personality factors, and cognitive development in children between four and nine years of age. In our most recent work we have begun to study more complex patterns of interacting effects of the child's environment and his personality on his intellectual achievement and on his creativity.

The environmental factors that we have investigated can be classified as controlled naturalistic factors and as experimentally manipulated variables. Among the naturalistic environmental factors, we have been investigating the child's family background (e.g., nurturance deprivation, social class, and ethnic identity), educational history of the child (e.g., the timing of educational intervention or the age at which a child enters school), the teaching style which the child experiences in his classroom, and patterns of teacher-child interaction. With regard to the experimental modification of the environment we have manipulated such variables as nurturance, conditions of reinforcement in learning situations, and methods of teaching in classroom situations.

With regard to personality variables, that is motivational and emotional factors, we have investigated effects of dependency and other motivational variables on cognitive development; more recently, we have begun to study the role of personality variables such as anxiety, tolerance of ambiguity, and self-esteem as mediators between environmental influences

and cognitive functioning in children.

Our dependent variables consisted of a) verbal and non-verbal measures of cognitive functioning, i.e., the Stanford-Binet Test, the Peabody Picture Vocabulary Test, the Goodenough Draw-A-Man Test, the Science Research Associate Achievement Test, the Torrence Creativity Test, b) a problem-solving task which we have constructed for our own purposes.

Some of the major findings contained in the present Annual Report have been as follows:

1. Study I: Our continued follow-up study of the history of educational intervention in disadvantaged children has produced a series of new findings during the past year, e.g., the timing of pre-testing has been found to effect a child's scores on intelligence tests. Specifically, children tested immediately after entering school score lower than children tested after they have become familiar with the school surroundings. This finding has particular importance for our own study and has clear implications for pre- and post-studies in which the difference between pre- and post-scores may be artificially inflated or deflated as a function of the timing of pre-testing. A second major finding has been that the interrelationships between our battery of intelligence tests has persisted with little if any change from the First into the Second Grade. A third major finding has been that the initial gain in intellectual functioning as the result of earlier educational intervention appears to persist into the Second and Third Grade on our most important test of

intellectual achievement, namely the Stanford Binet, and on classroom grades. On the other hand, the level of intellectual achievement appears to decline in all our disadvantaged lower class children regardless of time of educational intervention on one of our measures, namely, the Goodenough Draw-A-Man Test. We have found previously that this test is particularly sensitive to differences between schools or educational settings and this suggests that the marked decline of all children on this test might reflect changes in educational stimulation as the child moves from preschool through elementary school. Moreover, of all our measures of intellectual functioning, the Draw-A-Man Test is most likely to be affected by personality factors such as changes in self-image. A fourth major finding has been a rather sharp increase in the predictive power of our personality variables for the child's cognitive functioning from the First to the Second Grade.

2. Study II: The history of a child's nurturance deprivation has a significant effect on the child's sensitivity to renewed experiences of deprivation. An experimental design for further research in this area has been outlined and included in the present report.

3. Study III: Our pilot work for a projected extensive study of conditions of reinforcement for cognitive learning has yielded preliminary but strong support for the developmental implications of differences between intrinsic and extrinsic reinforcement.

4. Study IV: A series of scales have been constructed for the measurement of teaching style. A Factor analysis of these scales yielded

two separate Factors. One factor consists of social or interpersonal teacher behavior while the second factor deals with curriculum-oriented teacher behavior. These scales have been subjected to two validity tests, one involving external criteria and the other predictive validity. The outcome of the first validity test suggested that these scales might be useful for the selection of teachers. The second validity test indicated that the items dealing with curriculum-oriented teacher behavior might be useful in measuring the effectiveness of teaching on the performance of pupils on cognitive learning tasks under intrinsic reinforcement.

5. Study V: Children who gained in Head Start were compared with children who failed to gain and children whose intellectual performance decreased following their attendance of Get Set classes. It was found that children who gained made relatively more instrumental dependency requests of their teachers than emotional dependency requests. Gainers elicited more positive reactions from their teachers than did the losers. Gainers coped more constructively and less regressively with frustrations resulting from the child's interactions with his teacher. Gainers received more attention from their social environment when engaging in autonomous behavior than did losers or non-changers. Finally, gainers were more able to learn a cognitive problem-solving task than losers or non-changers under conditions of intrinsic reinforcement. The conclusion from this finding was that the learning process has more self-rewarding characteristics in gainers than in other children.

6. Study VIII: A study of moral development in lower class Negro children showed that the "concept of time" plays a central role in moral conduct and in the development of moral judgement.

Study 1 - Part 1

Use of Multiple Criteria to Evaluate Effects on Early Educational Intervention on Subsequent School Performance

My discussion today will focus on two issues: what do we gain from the use of multivariate measures of intellectual competence, and what do we gain from a multivariate approach to the interaction between motivational variables and intellectual competence?

Three major intelligence tests were employed in our follow-up study of the effects of educational intervention on intellectual functioning and development in disadvantaged pre-school children. The first of these, the Stanford Binet, is primarily a verbal test; the second, the Goodenough Draw-a-Man Test, is essentially a non-verbal performance test; and the third, the Peabody Picture Vocabulary Test, lies somewhere between a verbal and a non-verbal test. Our study focused on three groups of children. Group I consisted of approximately 60 lower class, disadvantaged children who were selected randomly for enrollment in an experimental nursery program which was much like the current Get Set Program. Group II included children who entered kindergarten with no prior nursery experience; the sole criterion for this selection was that they be matched on sex and chronological age with children in Group I. The third group consisted of children who entered first grade without any nursery or kindergarten experience. These children were also matched on age and sex with children in Groups I and II.

The experimental design specified that all these children be tested shortly after they entered school, and retested annually until they had completed at least four grades of elementary school. The initial testing was usually delayed until four to five months after the child had entered school, in order to avoid the effects of a strange setting, unfamiliarity with the testing situation, and the undue amount of stress manifested by many of these children when tested in a strange situation. This testing schedule was applied to the initial testing of children in nursery (Group I) and of children who entered kindergarten without nursery (Group II). However, the initial testing of first grade children (Group III) had to be carried out very shortly after they entered school, in order to make their scores comparable to those of the two other groups, who had been tested toward the end of the preceding year. This difference in the timing of testing was eliminated in subsequent years.

First I shall discuss initial IQ scores of children entering school at different ages, that is, children in Groups I, II, and III. Table 1 shows that there is no uniform tendency for initial IQ scores to increase or decrease with increased age. In other words, a child's IQ score apparently neither improves nor deteriorates if he enters school at four, five or six years of age. Two of the tests show no difference at all, although children who entered first grade without prior pre-school experience show lower scores on the Stanford Binet. However, this is only one instance and, as I indicated earlier, their lower scores might be a function of the fact that they were tested shortly after they entered school and, therefore, tested in a less familiar situation than children in Groups I and II.

The absence of an appreciable difference between IQ scores of children entering school at an earlier or later age is of particular importance to our study. Since we could not select our three groups at the same initial age and assign them randomly to the three different groups, there was always the question of whether some bias in a child's background could have affected the amount of gain with a shorter or longer period of schooling. Children who entered nursery might have come from different types of homes than children who entered kindergarten without nursery or those who entered first grade without any pre-school experience. The fact that there are no appreciable differences between Groups II and III, or between I and III on two of the three tests, suggest against the operation of a selective factor at the outset of the study, at least with regard to a child's intellectual achievement.

Table I reveals a second major finding, namely, that the degree of poorer performance in the disadvantaged compared to the middle class child varies from test to test. For example, lower class disadvantaged pre-school children do not deviate markedly from average on the Goodenough Draw-a-Man-Test, which yields a general average IQ of 97.3 (N=96). They deviate more strongly on the Stanford Binet test (N=90) which yields a general IQ score of 89.7, and their scores are much below average on the Peabody Picture Vocabulary Test, which yields a general average IQ score of 75.8. It is clear from these findings that any estimate of depressed intellectual achievement in lower class deprived children must be qualified with reference to the test on which such an estimate is based.

It is important to note that the Peabody Picture Vocabulary Test, which yields the lowest IQ score for our children has been very widely used in studies of lower class deprived children. This test incorporates certain very desirable features and should be improved if possible. It can be administered in a much shorter period of time and requires much less training compared to the Stanford Binet or other individually administered intelligence tests. Moreover, as we shall see below, the Peabody Test resembles the Stanford Binet in a variety of ways.

This point leads to the next question, namely, the correlations between these tests in those instances where more than one of them was administered to the same child or group of children. The intercorrelations among these tests are presented in Table 2. The Peabody Test shows a higher correlation with the Stanford Binet than does the Draw-A-Man Test. The correlation between the Peabody Test and the Draw-A-Man Test is very low, but both tests correlate more highly with the Stanford Binet than they do with each other, a finding which suggests that the two tests measure different aspects of the same general area of intellectual functioning. It is interesting to note that the intercorrelations between two pairs of these tests decrease consistently with age, i.e., Stanford Binet and Draw-A-Man, and Draw-A-Man and Peabody Picture Vocabulary. This trend suggests that one must be very careful in using different tests of intellectual achievement interchangeably as one moves from pre-school to the elementary grades.

We shall now evaluate the impact of pre-school experience on intellectual achievement in these three groups of children. The general conclusion that can be drawn from our findings (See Table 3) is that the impact of earlier educational intervention on intellectual achievement becomes evident after one year, and continues practically undiminished into the second year of the follow-up study. Data presented in Tables 3 through 9 support this conclusion. The three different tests continue to differ from one another over time with respect to certain areas.

The Stanford Binet Test and the Peabody Picture Vocabulary Test reflect most clearly the effects of length of educational experience, and are also the most sensitive to the effects of different schools on intellectual achievement. (See Tables 4 and 5) However, neither of these tests shows any difference in scores between boys and girls (See Tables 7 and 8). The Goodenough Draw-A-Man Test shows precisely opposite trends, that is, this test is insensitive to the effect of length of schooling, and to the effects of differences between schools. (See Table 6) However, it reflects sex differences which do not emerge on the Binet and Peabody Tests. Girls consistently out-perform boys on the Goodenough, but not on the other two tests (See Tables 7, 8, and 9). The Goodenough is also sensitive to the interactions of length of type of schooling (See Table 6). Finally, all three tests show a consistent and significant rise in IQ from the end of kindergarten to the end of first grade.

The most relevant evidence for the impact of pre-school education on school performance becomes available when we can begin to obtain school grades for children in our three different groups. Table 10 shows that the timing of educational intervention is significantly reflected in report marks at the end of the first grade. Children with pre-school experience, whether it was nursery and/or kindergarten, receive significantly higher grades in arithmetic, reading, and writing than children who entered first grade with no prior educational experience. Apparently it does not matter whether a child had nursery and kindergarten, or only kindergarten: both types of background experience clearly affect his grades, compared to children with no pre-school experience.

These findings at the end of first grade are supported by subsequent analyses of marks obtained for the same children on the first report card of the second grade (See Table 1). The impact of early educational intervention now becomes apparent in a number of important subjects in addition to arithmetic and reading. Children in Groups I and II surpass those in Group III with respect to spelling, social studies, science, speech, and written expression. Pre-school experience apparently does not affect performance in such areas as art, health, education, work habits, handwriting, and citizenship practices; children with prior schooling tend to have superior grades even in these areas, but the trends fail to reach statistical significance.

This demonstrated prolonged effect of earlier educational intervention on academic achievement in practically all school subjects is indeed remarkable, especially since 44 percent of these children were spread over

38 schools in which none of the teachers could have known to which of our three groups her pupil belonged.

Attitudes Toward Learning: When our original follow-up group completed first grade, we collected data on the children's attitudes toward study and learning, and toward school in general. This was done through teacher ratings of the child. All teachers of classes which included any children from our three follow-up groups were asked to list about three children who appeared to be the most and the least able in classroom performance.

One hundred and ten of our children were located in seven classes of our four original schools; in addition, these ratings were completed by 38 teachers in 38 different schools to which the remainder of the children had transferred. The outcome of these ratings is reported in Table 12. The groups rated as having the best attitudes include the highest percentage of children with a background of nursery and kindergarten, i.e., nine out of 11 with the best attitudes toward study and learning, and six out of eight with the best attitudes toward school in general. By contrast, the highest percentage of children with the worst attitudes are also those children who had neither nursery nor kindergarten experience, i.e., seven out of eight with the worst attitudes toward study, and eight out of 11 with the most negative attitudes toward school. The ratings on children who were especially able versus those who were especially slow academically, and on the most versus least popular children in the classroom, go in the same direction but do not reach significance.

The same ratings by teachers were redone at the end of the first report period in the second grade (See Table 13). These findings confirm those obtained at the end of first grade, except that the effect of earlier educational intervention on ratings of pupil's perceived ability in the classroom has now become highly significant. These data offer evidence for the beneficial effects of pre-school and kindergarten experience on the child's attitude toward learning and school in general. Early educational intervention affects not only cognitive functioning and academic achievement, but also the child's attitude toward learning and school.

Motivation and Intellectual Achievement: Before I began working with lower class disadvantaged children, I had developed a series of personality measures which were validated on middle class children. The specific areas of motivation and personality functioning tapped by these measures were: dependency of children on adults, independence striving, dependency conflict, and aggression. Dependency striving refers to the frequency and persistence with which a child seeks help, attention, recognition, physical contact, and proximity to adults. Independence of autonomous achievement striving refers to the frequency with which a child initiates activity, tries to overcome obstacles, and to complete activities by himself, to the frequency with which he derives satisfaction from this whole process and the extent to which he desires or enjoys doing things or solving problems by himself. The idea of unaided effortful striving underlies this concept of independence. Aggression is defined as the frequency with which a child threatens, derogates, attacks physically, and destroys.

Dependency conflict is defined in terms of a child's difficulty in accepting his dependency needs and in permitting himself to seek emotional and physical support from his protective environment. Thus, a child who is conflicted over his dependency will be inhibited in expressing his needs for help, affection, and attention; he will use direct and devious ways to gratify his dependency needs; and finally, he will betray his conflict over dependency by fluctuating irrationally and unpredictably between excess control and over-control in his manifestations of dependency needs.

The data presented in Table 14 illustrate the place of dependency conflict in the personality dynamics of the children in the follow-up study. First, we note that dependency motivation and dependency conflict are almost entirely uncorrelated. This finding demonstrated that we have successfully constructed two separate and different measures of dependency; one which deals with the frequency and intensity of a child's dependency striving, and the other with the amount of conflict he experiences over manifesting his dependency needs.

The relationship between conflict and both autonomous achievement striving and aggression are of substantive importance. We find that the more conflicted a child is over his dependency, the more impaired he is in his autonomous achievement striving, or self-sufficiency. Thus, disadvantaged children who are inhibited in seeking help and support from the adult environment fail to develop a high level of motivation to function independently and self-sufficiently. In other words, the disadvantaged lower class child who does not trust his environment enough to seek and utilize physical and emotional support from adults, fails to develop confidence in himself and is unable to function independently and self-sufficiently.

Finally, the relationship between dependency conflict and aggression is less strong but still statistically significant and extremely important. Children with conflict in the area of dependency also have difficulty in controlling their aggression. Thus, the child who is conflicted over his dependency not only fails to develop self-sufficiency, but also apparently experiences difficulty in handling his aggression. Both relationships, especially the former, seem to increase with age (See Table 14).

A consideration of the relationship between personality and intellectual performance in our children reveals that autonomous achievement striving and dependency conflict relate consistently and inversely to performance on intelligence tests. Table 15 shows that the autonomous achievement striving correlates consistently and positively with performance on three different intelligence tests, whereas dependency conflict correlates consistently and negatively with performance on the same three tests. Those children who are more motivated to be self-sufficient in coping with their environment are also higher in their intellectual achievement, as measured by our tests. Similarly, children who are more inhibited in manifesting dependency needs and in turning to the adult environment for support are more handicapped in their intellectual achievement. The fact that the magnitude of these relationships increases with age on two of our tests suggests that they may reflect a developmental process in these lower class deprived children.

These findings have definite implications for curriculum planning, especially for nursery and kindergarten programs. Much thought should be given to procedures for encouraging these children in their autonomous achievement striving, that is, in their efforts to explore things on their own initiative and to carry to completion activities that have begun. Even more central is the need to help these children develop greater trust in their adult environment and thereby overcome their inhibitions and conflicts over turning to protective adults for emotional and physical support. Our findings suggest that such efforts would greatly enhance the effectiveness of programs for training these children to become competent in areas of intellectual achievement, as well as to develop confidence in themselves and in others.

We have shown that certain personality variables correlate with intellectual achievement in deprived lower class children, while other personality variables fail to affect the quality of a child's performance in the cognitive domain. We now consider the issue of changes in personality from nursery to first grade. Table 16 suggests the following generalizations: Group I, that is, first graders who have been in school for the longest period, seem to be highest on dependency on teachers and on aggression measures. These children are also highest on autonomous achievement striving, and lowest on conflict over dependency. In sharp contrast, children from Group III, who did not enter school until first grade, are lower than the two other groups of first graders in autonomous achievement striving, and higher in inhibition, or conflict over dependency.

The meaning of these findings may be clarified by a discussion of the implications of two pairs of personality variables, namely autonomous achievement striving and dependency conflict on one hand, and dependency motivation with respect to teachers and aggression on the other. We must refer back to a finding reported in Table 14, showing that only autonomous achievement striving and dependency conflict correlate with intellectual achievement. Thus, the finding that both Groups I and II, who had pre-school experience, are higher in autonomous achievement striving and lower in dependency conflict, suggests that these trends may be related to significantly higher intellectual performance of these same two groups on three different tests of intellectual achievement. In other words, children who have had the benefit of pre-school experience are more highly motivated to be self-sufficient in their achievement striving, and simultaneously have greater trust in their adult environment so that they seek from it the physical and emotional support it has to offer.

The elevation of the dependency motivation and aggression variables in children who have had both nursery and kindergarten experience is clarified when we reiterate that these two variables are uncorrelated with intellectual achievement at three successive age levels, that is, in nursery, kindergarten, and in first grade. This finding alone indicates that an elevation in emotional dependency on the teacher and in the expression of aggression is not incompatible with the superior intellectual functioning of these same children.

What then is the meaning of increased dependency and aggression in Group I children, that is, children who have had the nursery experience? It may mean simply that these children have developed a closer emotional bond with the teacher, which represents a delayed development of what normally occurs earlier in middle class children in our society. This emotional tie provides the teacher with a greater opportunity to reach the child, to socialize him, and to influence him than is possible with the child who has not yet developed such an emotional tie. Thus, heightening dependency might be a positive sign that the child is now more amenable to socialization and to educational influence from the teacher, rather than a sign of fixation at an infantile level of functioning. The same inference can be made with regard to heightened aggression in children who have had the nursery experience. Most of these children experience considerable frustration in their daily lives away from the classroom. These children may simply be less inhibited in giving vent to their reactions to a very frustrating life outside the classroom. The positive meaning of this finding for educational opportunity and the role of the school in shaping the child's future will be more fully appreciated after I report one of my most vivid impressions in pre-schools for deprived lower class children.

After training teachers to rate children in the areas of dependency, autonomous achievement striving, and aggression. I encountered considerable resistance from teachers from a similar background as their pupils when asked to report incidents of aggression. Time and again, I was confronted with the statement that these children did not manifest any aggression, particularly in the nursery and kindergarten. Apparently, many of these teachers were reluctant either to perceive or to permit aggression in these lower class, highly deprived children from backgrounds which generated considerable frustration and therefore at least the potential for aggression. These teachers' difficulty in either perceiving or accepting aggression in their deprived pre-school pupils greatly weakens their potential effectiveness as socializers of aggression. By denying or suppressing aggressive behavior in the nursery or kindergarten, the teacher simply removes the aggression from the classroom and disqualifies herself as an effective agent in modifying the child's ability to cope with hostile and aggressive impulses.

On the basis of this experience, I would say that nursery children who manifest more aggression in the first grade are not necessarily less socialized than their peers who separate this area of behavior from the classroom and therefore remove it from the teacher's influence. The stable and intimate relationship which the nursery child was able to experience and develop with his teacher has encouraged him to display a much wider range of all behavior, even if it is undesirable, in the presence of this protective figure whom he has come to trust. I maintain that in this sense the heightened manifestations of emotional dependence on the teacher and of aggression represents a delayed, positive development in deprived children, which indicates that these children are much more amenable than their peers to the educational process and to socialization by the school. Together with higher autonomous achievement striving and lower inhibition in the manifestation of dependency, these changes represent greater self-confidence and increased trust in the human environment in those children who have had the benefit of a nursery experience, compared to children who were not exposed to the educational process until they entered first grade.

TABLE I

INITIAL AVERAGE IQ SCORES OF CHILDREN ENTERING SCHOOL AT NURSERY (Group I), KINDERGARTEN (Group II), and FIRST GRADE (Group III)

Groups	N	Averages	S.D.
		Stanford Binet	
I	55	92.3	10.5
II	53	91.2	15.0
III	58	85.8	13.2
		Draw a Man	
I	49	96.0	19.3
II	52	97.0	17.7
III	58	98.7	18.2
		Peabody Picture Vocabulary	
I	100*	75.0	17.3
II	45	79.4	14.8
III	58	74.5	17.0

* Since this test (PPV) was not administered to the original group in 1963-64, the scores of children entering Nursery in the subsequent year (1964-65)were used in this cell.

TABLE 2

CORRELATIONS (r) BETWEEN STANFORD BINET (SB), DRAW-A-MAN (DAM) AND PEABODY PICTURE VOCABULARY (PPV) TEST IQ SCORES IN NURSERY KINDERGARTEN AND FIRST GRADE CHILDREN

Item	Nursery (N = 58)	Kindergarten (N = 148)	First Grade (N = 146)
SB with DAM	.50**	.40**	.28**
SB with PPV	_____+	.63**	.61**
	(N = 44)		
DAM with PPV	.25*	.15	.13

** p .01
* p .05
+ None of our groups had both of these two IQ tests

TABLE 3

MEAN SCORES ON THREE MEASURES OF INTELLIGENCE (STANFORD BINET, GOODENOUGH, DRAW-A-MAN TEST, AND THE PEABODY PICTURE VOCABULARY TEST) FOR THREE GROUPS OF CHILDREN: GROUP I (NURSERY AND KINDERGARTEN), GROUP II (KINDERGARTEN ONLY) AND GROUP III (NEITHER NURSERY NOR KINDERGARTEN)

Groups	N	Kindergarten	First Grade
		Stanford Binet	
I	39*	96.6	98.3
II	52	91.2	94.3
III	56	86.1	89.8
		Draw A Man	
I	38	96.9	103.6
II	51	97.0	100.0
III	56	99.1	100.3
		Peabody Picture Vocabulary	
I	35	84.6	90.7
II	44	80.3	85.9
III	55	74.7	82.4

*We were able to recover 13 more children from this group for the retesting a year later.

TABLE 4

ANALYSIS OF VARIANCE OF STANFORD BINET IQ SCORE CHANGES FROM KINDERGARTEN TO FIRST GRADE FOR THREE GROUPS OF CHILDREN WITH DIFFERING AMOUNTS OF EDUCATIONAL EXPERIENCE

Source	SS	df	MS	F
Between Subj.		146		
A (Educ'l Experience)+	4,972.17	2	2,486.08	7.45**
B (Schools)	4,399.08	3	1,466.36	4.39**
AB	312.14	6	52.02	<1
Subj. W. Grps.	45,064.25	135	333.81	<1
Within Subj.				
C (Pre-Post Change)	601.66	1	601.66	12.29**
AC	6.53	2	3.26	<1
BC	125.81	3	41.94	<1
ABC	320.88	6	53.48	1.09
C x Subj. W.Grps.	6,607.39	135	48.94	<1

** $p < .01$
+ A = Amount of educational experience

TABLE 5

ANALYSIS OF VARIANCE OF PEABODY PICTURE VOCABULARY IQ SCORE CHANGES FROM KINDERGARTEN TO FIRST GRADE FOR THREE GROUPS OF CHILDREN WITH DIFFERING AMOUNTS OF EDUCATIONAL EXPERIENCE

Source	SS	df	MS	F
Between Subj.		133		
A (Educ'l Experience)$^+$	3,503.88	2	1,751.94	5.63**
B (School)	4,137.81	3	1,379.27	4.44**
AB	3,406.64	6	567.77	<1
Within Subj.		134		
C (Pre-Post Change)	2,763.18	1	2,763.18	45.86**
AC	40.91	2	20.46	<1
BC	293.56	3	97.85	1.62
ABC	329.01	6	54.84	<1
C x Subj. w. grps	7,350.48	122	60.25	<1

** $p < .01$

+ A = Amount of educational experience

TABLE 6

ANALYSIS OF VARIANCE OF GOODENOUGH DRAW-A-MAN IQ SCORE CHANGES FROM KINDERGARTEN TO FIRST GRADE FOR THREE GROUPS OF CHILDREN WITH DIFFERING AMOUNTS OF EDUCATIONAL EXPERIENCE

Source	SS	df	MS	F
Between Subj.		144		
A (Educ'l Experience)+	130.99	2	65.50	<1
B (Schools)	1,941.51	3	647.17	1.12
AB	1,558.94	6	259.82	<1
Subj w. grps.	77,141.31	133	580.01	<1
Within Subj.		145		
C (Pre-Post Change)	1,035.45	1	1,035.45	6.71*
AC	381.54	2	190.77	1.23
BC	1,429.33	3	476.44	3.09*
ABC	786.27	6	131.04	<1
C x Subj. w. grps.	20,514.02	133	154.24	1

* $p < .05$

+ A = Amount of educational experience

TABLE 7

ANALYSIS OF VARIANCE OF PEABODY PICTURE VOCABULARY IQ SCORE CHANGES FROM KINDERGARTEN TO FIRST GRADE FOR THREE GROUPS OF CHILDREN WITH DIFFERING AMOUNTS OF EDUCATIONAL EXPERIENCE

Source	SS	df	MS	F
Between Subj.		133		
A (Educ'l Exper.)[+]	2,776.48	2	1,388.24	4.14*
B (sex)	2,256.68	3	752.23	2.24
AB	267.72	6	44.62	1
Subj. w. grps.	40,914.15	122	335.36	1
Within Subj.		134		
C (Pre-Post Change)	2,708.44	1	2,708.44	30.61**
AC	35.92	2	17.96	1
BC	12.04	1	12.04	1
ABC	98.47	2	49.24	1
C x subj. w. grps.	11,324.82	128	88.48	1

* p .05
** p .01
[+] A = Amount of educational experience

TABLE 8

ANALYSIS OF VARIANCE OF STANFORD BINET IQ SCORE CHANGES FROM KINDERGARTEN TO FIRST GRADE FOR THREE GROUPS OF CHILDREN WITH DIFFERING AMOUNTS OF EDUCATIONAL EXPERIENCE

Source	SS	df	MS	F
Between subj.		146		
A (Educ'l Experience)[+]	4,434.52	2	2,217.76	6.31**
B (sex)	63.50	1	63.50	1
AB	118.39	2	59.20	1
Subj. w. grps.	49,540.30	141	351.34	1
Within Subj.				
C (Pre-Post Change)	488.92	1	488.92	10.27
AC	89.31	2	44.66	1
BC	39.77	1	39.77	1
ABC	30.70	2	15.35	1
C x Subj.w. grps.	6,710.01	141	47.58	1
		293		

** p .01
[+] A = Amount of educational experience.

TABLE 9

ANALYSIS OF VARIANCE OF GOODENOUGH DRAW-A-MAN IQ SCORE CHANGES FROM KINDERGARTEN TO FIRST GRADE FOR THREE GROUPS OF CHILDREN WITH DIFFERING AMOUNTS OF EDUCATIONAL EXPERIENCE

Source	SS	df	MS	F
Between Subj.		144		
A (Educ'l Exper.)$^{+}$	200.71	2	100.36	<1
B (sex)	3,465.11	1	3,465.11	6.35*
AB	892.81	2	446.40	<1
Subj. w. grps.	75,808.25	139	545.38	<1
Within subj.		145		
C (Pre-Post change)	650.57	1	650.57	4.03*
AC	389.88	2	194.94	1.21
BC	295.30	1	295.30	1.83
ABC	69.21	2	34.60	<1
C x subj. w. grps.	22,413.81	139	161.25	<1

* $p < .05$
+ A = Amount of educational experience

TABLE 10

CUMULATIVE MARKS AND CHI SQUARE AT THE END OF FIRST GRADE FOR CHILDREN WITH DIFFERENT AMOUNTS OF EDUCATIONAL BACKGROUND: GROUP I NURSERY AND KINDERGARTEN, GROUP II KINDERGARTEN ONLY, GROUP III NEITHER NURSERY NOR KINDERGARTEN

SUBJECT	GROUP	FREQUENCIES (worst)*	(best)	CHI SQUARE	d.f.	P
Arithmetic	I	25	27	9.89	2	$<.01$
	II	24	22			
	III	39	12			
Reading	I	37	15	6.86	2	$<.05$
	II	33	13			
	III	46	5			
Writing	I	27	24	9.88	2	$<.01$
	II	16	30			
	III	34	17			

* Worst equals marks of C, D, F; best equals marks of A, B.

TABLE 11

MARKS AND CHI SQUARES ON FIRST REPORT CARD IN SECOND GRADE FOR CHILDREN WITH DIFFERENCE AMOUNTS OF EDUCATIONAL BACKGROUND: GROUP I NURSERY AND KINDERGARTEN, GROUP II KINDERGARTEN ONLY, GROUP III NEITHER NURSERY NOR KINDERGARTEN

		FREQUENCIES		CHI		
SUBJECT	GROUP	(worst)*	(best)	SQUARE	d.f.	P
Arithmetic	I	15	35			
	II	17	26	11.22	2	<.005
	III	28	16			
Spelling	I	19	28			
	II	20	22	7.75	2	<.025
	III	29	13			
Social Studies	I	23	21			
	II	29	13	12.17	2	<.005
	III	35	5			
Science	I	36	23			
	II	28	15	6.41	2	<.05
	III	36	7			
Speaking	I	29	21			
	II	27	19	7.39	2	<.05
	III	36	8			

* Worst equals marks of C, D, F; best equals marks of A, B.

TABLE II continued

SUBJECT	GROUP	FREQUENCIES		CHI SQUARE	d.f.	p
		(worst)*	(best)			
Reading	I	36	14	6.84	2	<.05
	II	38	6			
	III	42	4			
Written Expression	I	35	9	6.56	2	<.05
	II	33	8			
	III	38	1			
Art	I	24	22	2.39	2	N.S.
	II	19	18			
	III	26	13			
Health Education	I	22	25	2.32	2	N.S.
	II	18	23			
	III	25	17			
Handwriting	I	28	20	1.12	2	N.S.
	II	24	22			
	III	29	17			
Work Habits	I	27	24	2.65	2	N.S.
	II	25	23			
	III	32	16			
Citizenship Practices	I	30	21	2.12	2	N.S.
	II	22	26			
	III	28	20			

*Worst equals marks of C, D, F; best equals marks of A, B.

TABLE 12

RATINGS OF PUPIL ATTITUDES, ABILITIES AND POPULARITY IN FIRST GRADE FOR CHILDREN WITH DIFFERENT AMOUNTS OF EDUCATIONAL BACKGROUND: GROUP I NURSERY AND KINDERGARTEN, GROUP II KINDERGARTEN ONLY, GROUP III NEITHER NURSERY NOR KINDERGARTEN

QUESTION	GROUP	FREQUENCIES		CHI SQUARES	d.f.	p
		(best)	(worst)			
1. Especially able vs. especially slow	I	8	2	3.47	2	N.S.
	II	4	2			
	III	4	6			
2. best vs. worst attitude toward study and learning	I	9	2	9.07	2	$<.02$
	II	4	5			
	III	1	7			
3. most positive vs. most negative attitudes toward school	I	6	2	6.01	2	$<.05$
	II	6	2			
	III	3	8			
4. most vs. least popular among other children	I	5	8	2.70	2	N.S.
	II	5	2			
	III	3	6			

TABLE 13

RATINGS OF PUPIL ATTITUDES, ABILITIES AND POPULARITY IN SECOND GRADE FOR CHILDREN WITH DIFFERENT AMOUNTS OF EDUCATIONAL BACKGROUND: GROUP I NURSERY AND KINDERGARTEN, GROUP II KINDERGARTEN ONLY, GROUP III NEITHER NURSERY NOR KINDERGARTEN

QUESTION	GROUP	FREQUENCIES (best)	FREQUENCIES (worst)	CHI SQUARES	d.f	P
1. especially able vs. especially slow	I	16	5			
	II	10	9	10.76	2	<.005
	III	5	15			
2. best vs. worst attitude toward study and learning	I	17	4			
	II	12	5	8.88	2	<.02
	III	8	13			
3. most positive vs. most negative attitude toward school	I	15	9			
	II	13	4	6.20	2	<.05
	III	6	11			
4. most vs. least popular among other children	I	12	9			
	II	5	5	1.12	2	N.S.
	III	5	8			

TABLE 14

CORRELATIONS (r) BETWEEN PERSONALITY MEASURES † IN NURSERY, KINDERGARTEN, AND FIRST GRADE CHILDREN

PERSONALITY VARIABLES	NURSERY (N = 174)	KINDERGARTEN (N = 93)	FIRST GRADE (N = 96)
DC with DS	-.17**	-.09	-.07
DC with AAS	-.34**	-.50**	-.70**
DC with AGG	.08	.30**	.25*

** $p < .01$

* $p < .05$

† Dependency Striving (DS), Autonomous Achievement Striving (AAS), Aggression (AGG), Dependency Conflict (DC).

TABLE 15

CORRELATIONS (r) OF PERSONALITY MEASURES † WITH INTELLECTUAL ACHIEVEMENT IN NURSERY, KINDERGARTEN AND FIRST GRADE CHILDREN.

PERSONALITY VARIABLES	NURSERY	KINDERGARTEN	FIRST GRADE
		Stanford Binet Scores	
	(N = 49)	(N = 93)	(N = 86)
DS	.01	.20	.02
AAS	.30*	.32**	.43**
AGG	-.02	-.02	.02
DC	-.13	-.30**	-.41**
		Draw A Man Scores	
	(N = 45)	(N = 91)	(N = 95)
DS	-.11	.01	-.03
AAS	.18	.23*	.36**
AGG	-.15	-.16	-.15
DC	-.04	-.20	-.31**
		Peabody Picture Vocabulary Scores	
	(N = 94)	(N = 82)	(N = 95)
DS	-.01	.16	-.07
AAS	.38**	.24*	.29**
AGG	-.07	-.02	.11
DC	-.33**	-.34**	-.21*

* $p < .05$

** $p < .01$

† Dependency Striving (DS), Autonomous Achievement Striving (AAS), Agression (AGG), Dependency Conflict (DC).

TABLE 16

AVERAGE PERSONALITY MEASURES* OF FIRST GRADE CHILDREN WITH DIFFERENT AMOUNTS OF EDUCATIONAL BACKGROUND: GROUP I NURSERY AND KINDERGARTEN, GROUP II KINDERGARTEN ONLY, GROUP III NEITHER NURSERY NOR KINDERGARTEN

	GROUP I (N = 31)	GROUP II (N = 28)	GROUP III (N = 37)
DS †	4.30	3.56	3.72
AAS ‡	4.35	4.29	3.41
AGG ‡	4.54	3.56	3.44
DC †	3.55	3.95	4.25

‡ Difference between groups $p < .05$ when tested by Analysis of Variance

† Difference between groups $p < .10$ when tested by Analysis of Variance

* Dependency Striving (DS), Autonomous Achievement Striving (AAS), Aggression (AGG), Dependency Conflict (DC).

BELLER SCALES

TEACHER RATINGS

Control of Children

Please rate the extent to which the teacher controls the class by issuing orders and commands. Is a suggestion mandatory or optional? Does the child have to obey?

1._____The teacher issues peremptory orders.

2.____

3._____The teacher's orders and suggestions are not completely coercive.

4.____

5._____The teacher is coercive in some matters, but optional suggestions are also used.

6.____

7._____The teacher tends to avoid coercion wherever possible.

8.____

9._____The teacher consistently allows the children a very wide range of free choice.

TEACHER RATINGS

Distinction between Work and Play

Please rate the extent to which the teacher distinguishes between work and play.

1._____Distinguishes always.

2.____

3._____Distinguishes often.

4.____

5._____Permits some overlap.

6.____

7._____Permits much overlap.

8.____

9._____Makes almost no distinction.

BELLER SCALES

TEACHER RATINGS

Approval-Disapproval

Please rate the direction of the teacher's critical reaction to the behavior of the children. Is the teacher's reaction generally one of praise and approval, or does the teacher usually blame and disapprove?

1.____Praise and commendation given frequently and liberally.

2.____

3.____Emphasis on approval. Disapproval is mild and infrequent.

4.____

5.____Approval and disapproval are balanced.

6.____

7.____Emphasis on disapproval. Approval is mild and infrequent.

8.____

9.____Continuous disapproval and fault-finding.

BELLER SCALES

TEACHER RATINGS

Closeness to Children

Please rate the extent to which the teacher seems to be really close to and in touch with the children.

1._____The teacher is very detached.

2.____

3._____The teacher is somewhat aloof.

4.____

5._____The teacher interacts easily with the children.

6.____

7._____The teacher is somewhat involved in the emotion and feelings of the children.

8.____

9._____The teacher is very close to the children.

BELLER SCALES

TEACHER RATINGS

Enjoyment of Teaching

Please rate the general attitude expressed by the teacher regarding her teaching experiences.

1._____Fully enjoys each day's activities and discusses work with enthusiasm and involvement.

2.____

3._____Enjoys teaching most of the time and generally manifests interest in work.

4.____

5._____Has mixed feelings and fluctuates in attitude about teaching.

6.____

7._____Sometimes expresses dissatisfaction regarding teaching.

8.____

9._____Expresses discontent with teaching and performs duties in perfunctory manner.

TEACHER RATINGS

Individual vs. Group Needs

Please rate the extent to which the teacher seems to be concerned with and attentive to the needs of individual children or the class as a whole. Does the teacher direct her efforts toward the group as a group, rather than allowing children to be "special" or "different"? Or does the teacher become deeply involved with a particular child or a few children rather than with the group as a whole?

Please do not rate the teacher on how well she attends to individual or group needs but only the direction of her concern.

1._____Group needs dominant.
2.____
3._____Group needs are more prominent than individual needs.
4.____
5._____Varies between group needs and individual needs.
6.____
7._____Individual needs are more prominent than group needs.
8.____
9._____Individual needs dominant.

BELLER SCALES

TEACHER RATINGS

Classroom Arrangement

Please rate the teacher to the extent to which she arranges the classroom seating arrangement.

1._____Seats arranged by rows and assigned by teacher on a permanent basis.

2.___

3._____Seats arranged in rows, with occasional changes in assignment record.

4.___

5._____Seating arrangements vary; teacher assigns and occasionally changes assignments.

6.___

7._____Seating arrangements vary; children have voice in changing assignments.

8.___

9._____Seat arrangements completely flexible in terms of space. Children choose locations at any time.

BELLER SCALES

TEACHER RATINGS

Approach to Learning

Please rate the extent to which the teacher gives the pupils learning experiences which are assortments of facts or exercises in thinking. For example, does the teacher stimulate the children to wonder or does she present a lesson, expecting the children to learn?

Please do not rate the teacher on how successfully she either supplies facts or stimulates thinking. Consider only the extent to which she seems to be trying to do one or the other.

1._____The teacher provides facts and information.
2.____
3._____The teacher emphasizes the acquisition of information, but also gives a little attention to thinking skills.
4.____
5._____The teacher gives information to the pupils, and encourages them to inquire and think independently.
6.____
7._____The teacher emphasized the development of thinking skills, but does not provide much information for the pupils.
8.____
9._____The teacher encourages the children to think and explore.

BELLER SCALES

TEACHER RATINGS

Flexibility in Programming

Please rate the extent to which the teacher's activities are tied to an organized schedule. Is the class routine so rigidly scheduled that the reactions of children are disregarded when they do not fit the teacher's program or does the teacher seem to be functioning with little or no design?

1._____The teacher always follows a schedule.

2.____

3._____The teacher tends to follow an organized schedule.

4.____

5._____The teacher follows an organized schedule.

6.____

7._____The teacher sometimes follows a loosely organized schedule.

8.____

9._____The teacher seems to function without a schedule.

BELLER SCALES

TEACHER RATINGS

Control of Materials

Please rate the extent to which the teacher controls instructional materials.

1._____Teacher clearly and firmly directs use of materials.
2.____
3._____Teacher directs use of materials most of the time.
4.____
5._____Teacher and children fluctuate in determining choice and use of materials.
6.____
7._____Children select materials to be used for the most part. Teacher remains in the background.
8.____
9._____Children are dominant, may select and use materials at will.

Study 1 - Part 2

In last year's Annual Report and in the paper "The Use of Multiple Criteria to Evaluate Effects of Early Educational Intervention on Subsequent School Performance", we presented the IQ scores of children entering school at different ages, that is, children entering Nursery at four, Kindergarten at five, and First Grade at six years of age. We found that there were no significant differences in the average IQ of a child entering school at these three age levels on two of our tests, namely the Draw-A-Man Test and the Peabody Picture Vocabulary Test. On the third test, namely the Stanford Binet, we did find significantly lower IQ scores for children entering school at Nursery or Kindergarten. This difference was attributed to a discrepancy in the time of testing rather than to a genuine difference between children entering school at successively later age levels. (See "The Use of Multiple Criteria...", page 2) Specifically, it was suggested that testing a child immediately after entering school for the first time had depressed the child's intellectual performance. The validity of this interpretation was of considerable importance to us and we believe to evaluative studies of educational intervention generally. Therefore we decided to not let the matter rest with an interpretation but follow it up with an empirical test. We selected 25 First Grade boys and 25 First Grade girls who had entered First Grade without pre-school experience in the same four schools in which the original study was carried out. The children were selected so as to be highly comparable in age, ethnic background, and social class to our original sample of children who entered First Grade without prior schooling. The testing of this new sample of children was carried out by three testers who had the same background and level of training as the testers of the initial group of children. The only difference between the initial group and the new group was that the initial group, as indicated, was tested during the month of September, immediately following the child's entrance into First Grade and the child's first exposure to school whereas the new sample of children were tested five months after school entry.

It can be seen from inspection of Table 1 that our earlier interpretation has been supported by the subsequent empirical test. The average Binet IQ score of the new Group III rose sufficiently (85.8 to 89.2) to make any difference negligible between these children and the children in Groups I and II. A new set of analyses of variance were carried out between Groups I, II, and our new Group III. It was found that for all three tests, i.e., Binet, Goodenough, and Peabody, there was no significant difference between the average IQ's of the three different groups. In other words, the IQ's of children entering school at Nursery, Kindergarten, and First Grade do not differ significantly from one another when all children are tested at the same time after school entry. 't' tests were carried out between our original and our new First Grade groups. It was found that the average IQ scores between the two groups did not differ significantly when based on the Stanford Binet and the Draw-A-Man Tests. The difference between the two groups on the Peabody Picture Vocabulary Test was significant ($p < .05$).

Two conclusions may be drawn from these findings. The first conclusion bears on our own follow-up study. It is that our three experimental groups do not differ significantly from each other with regard to their initial IQ level. Therefore, subsequent differences between the three groups after varying length of schooling or educational experience cannot be attributed to differences in the initial IQ levels of the three groups. A double blind study of the families of these three groups of children is currently being planned to determine whether our three experimental groups differed with regard to home background. The second conclusion that can be drawn from our finding pertains to the general importance of the time of initial testing for pre- post-studies. The time of pre-testing and the child's familiarity with the test situation is an important factor and must be controlled in order to obtain a valid measure of the effect of educational intervention when such a measure consists of the difference between pre- and post-test scores.

Since our last report of intercorrelation between the three IQ measures that we have employed in our follow-up study, we have obtained such intercorrelations for children on the Second Grade level. The supplementary findings are included in an enlarged table which is in all other respects comparable to Table 2 in the "Multiple Criteria" paper. Our new data for Second Grade children would seem to support our earlier generalization that the Draw-A-Man Test and the Peabody Picture Vocabulary Test correlate much higher with the Stanford Binet Test than they do with each other. We may therefore repeat our earlier conclusion that the Stanford Binet appears to be measuring a more general function of intelligence than either the Draw-A-Man Test or the Peabody Picture Vocabulary Test, especially in disadvantaged lower-class children between four and eight years of age.

With regard to the impact of educational intervention over time, we present supplementary data in addition to those reported in the "Multiple Criteria" paper in Table 3. Since an overall and complete statistical analysis will be carried out at the end of the fourth grade, we have limited ourselves in the present report to a presentation of average IQ scores for two additional age levels. The data in Table 3 permit us to make certain generalizations even in the absence of statistical analysis. It is clear that two of our tests, namely the Stanford Binet and the Peabody Picture Vocabulary Test, fail to show the decline in IQ scores that is generally reported to begin during the Second Grade. Every one of our three groups maintain the scores they have achieved by the First Grade. Although there is no further progress, there is no decline by the middle of the Third Grade. In striking contrast to the findings for the Binet and the Peabody Picture Vocabulary, there is a clear and fairly marked decline from the First to the Third Grade on our non-verbal intelligence test, namely the Goodenough Draw-A-Man Test.

In our follow-up study of the impact of educational intervention on academic achievement, we have been able to add classmarks for the end of the Second Grade and analyze differences between our three groups as reported for First Grade and middle of the Second Grade classmarks in

Tables 10 and 11 of the "Multiple Criteria" paper. It can be seen from Tables 4, 5, and 6 that the differential effect of earlier educational intervention and longer educational experience has remained virtually unchanged by the end of the Second Grade. Children with pre-school experience are still better in arithmetic, spelling, social studies, science, speaking, and reading. A few minor changes, such as slight decrease of the effect on arithmetic and on written expression and an increase in the effect of the length of educational intervention on music, leave the general picture that was found prior to these latest findings very much intact.

A final addition to the last report as contained in the "Multiple Criteria" paper has been a further analysis of the predictive relationships between our measures of personality at one age level and intellectual functioning on a subsequent age level. The earlier findings of predictive correlation from Nursery to Kindergarten and from Kindergarten to First Grade have been reported in Table 28 of the last Annual Report. The earlier findings have been included in Table 7 of the present report and correlations have been added between our four personality measures in the First Grade and measures of intellectual achievement in the Second Grade. It is interesting to note that the predictive power of our personality measures for intellectual achievement increases from the First to the Second Grade when compared to the same predictive relationships between Kindergarten and First Grade. This is particularly true for our measures of autonomous achievement striving and dependency conflict. As can be seen from inspection of Table 5, autonomous achievement striving in the First

Grade is consistently positively correlated with performance on intelligence tests in the Second Grade while dependency conflict in the First Grade is consistently negatively correlated with intellectual achievement in the Second Grade particularly as measured by the Stanford Binet Test and the Draw-A-Man Test. Finally, it is interesting to note that the Draw A Man Test which is entirely free of verbal factors is more sensitive than the other two tests to relationships between personality and intellectual functioning.

TABLE 1

INITIAL AVERAGE I.Q. SCORES OF CHILDREN ENTERING SCHOOL AT NURSERY (GROUP I), KINDERGARTEN (GROUP II), AND FIRST GRADE (GROUP III).

GROUPS	N	AVERAGES	S.D.
		Stanford Binet	
I	55	92.3	10.5
II	53	91.2	15.0
III+	58	85.8	13.2
III‡	50	89.2	13.3
		Draw-A-Man	
I	49	96.0	19.3
II	52	97.0	17.7
III+	58	98.7	18.2
III‡	50	100.3	15.8
		Peabody Picture Vocabulary	
I	100*	75.0	17.3
II	45	79.4	14.8
III+	58	74.5	17.0
III‡	50	82.2	13.3

*Since this test (PPV) was not administered to the original group in 1963-64, the scores of children entering Nursery in the subsequent year (1964-65) were used in this cell.

+Tested in Fall

‡Tested in Spring

TABLE 2

CORRELATIONS (r) BETWEEN STANFORD BINET (SB), DRAW-A-MAN (DAM) AND PEABODY PICTURE VOCABULARY (PPV) TEST I.Q. SCORES IN NURSERY KINDERGARTEN AND FIRST GRADE CHILDREN.

INTELLIGENCE TESTS	GRADE LEVEL			
	NURSERY	KINDERGARTEN	FIRST GRADE	SECOND GRADE
	(N=58)	(N=148)	(N=146)	(N=141)
SB with DAM	.50**	.40**	.28**	.40**
SB with PPV	______+	.63**	.61**	.61**
	(N=44)			
DAM with PPV	.25*	.15	.13	.18*

** p .01

* p .05

+ None of our groups had both of these two I.Q. tests.

TABLE 3

MEAN SCORES ON THREE MEASURES OF INTELLIGENCE (STANFORD BINET TEST, GOODENOUGH DRAW-A-MAN TEST, AND THE PEABODY PICTURE VOCABULARY TEST) FOR THREE GROUPS OF CHILDREN (GROUP I HAD NURSERY AND KINDERGARTEN, GROUP II HAD KINDERGARTEN ONLY AND GROUP III HAD NEITHER NURSERY NOR KINDERGARTEN) ON FOUR GRADE LEVELS

GROUPS	GRADE LEVEL							
	N	KINDERGARTEN	N	FIRST GRADE	N	SECOND GRADE	N	THIRD GRADE
				Stanford Binet				
I	(39*)	96.6	(39)	98.3	(50)	97.7	(45)	97.6
II	(52)	91.2	(52)	94.3	(49)	93.1	(46)	93.1
III	(56)	86.1	(56)	89.8	(42)	89.3	(51)	89.0
				Draw A Man				
I	(38)	96.9	(38)	103.6	(50)	99.3	(46)	93.5
II	(51)	97.0	(51)	100.0	(49)	98.4	(45)	90.8
III	(56)	99.1	(56)	100.3	(42)	95.6	(50)	86.5
				Peabody Picture Vocabulary				
I	(35)	84.6	(35)	90.7	(50)	88.5	(46)	89.9
II	(44)	80.3	(44)	85.9	(49)	88.9	(45)	89.0
III	(55)	74.7	(55)	82.4	(42)	87.1	(51)	86.5

* We were able to recover 13 more children from this group for the retesting a year later.

TABLE 4

CUMULATIVE MARKS AND CHI SQUARES AT THE END OF FIRST GRADE FOR CHILDREN WITH DIFFERENT AMOUNTS OF EDUCATIONAL BACKGROUND: GROUP I NURSERY AND KINDERGARTEN, GROUP II KINDERGARTEN ONLY, GROUP III NEITHER NURSERY NOR KINDERGARTEN

SUBJECT	GROUP	FREQUENCIES (worst)*	FREQUENCIES (best)	CHI SQUARE	d.f.	P
Arithmetic	I	25	27	9.89	2	<.01
	II	24	22			
	III	39	12			
Reading	I	37	15	6.86	2	<.05
	II	33	13			
	III	46	5			
Writing	I	27	24	9.88	2	<.01
	II	16	30			
	III	34	17			

* Worst equals marks of C, D, F; best equals marks of A, B.

TABLE 5

MARKS AND CHI SQUARES ON FIRST REPORT CARD IN SECOND GRADE FOR CHILDREN WITH DIFFERENT AMOUNTS OF EDUCATIONAL BACKGROUND: GROUP I NURSERY AND KINDERGARTEN, GROUP II KINDERGARTEN ONLY, GROUP III NEITHER NURSERY NOR KINDERGARTEN

SUBJECT	GROUP	FREQUENCIES (worst)*	(best)	CHI SQUARE	d.f.	P
Arithmetic	I	15	35	11.22	2	.005
	II	17	26			
	III	28	16			
Spelling	I	19	28	7.73	2	.025
	II	20	22			
	III	29	13			
Social Studies	I	23	21	12.17	2	.005
	II	29	13			
	III	35	5			
Science	I	36	23	6.41	2	.05
	II	28	15			
	III	36	7			
Speaking	I	29	21	7.39	2	.05
	II	27	19			
	III	36	8			

* Worst equals marks of C, D, F; best equals marks of A, B.

TABLE 5 continued

SUBJECT	GROUP	FREQUENCIES (worst)*	(best)	CHI SQUARE	d.f.	P
Reading	I	36	14	6.84	2	.05
	II	38	6			
	III	42	4			
Written Expression	I	35	9	6.56	2	.05
	II	33	8			
	III	38	1			
Art	I	24	22	2.39	2	N.S.
	II	19	18			
	III	26	13			
Health Education	I	22	25	2.32	2	N.S.
	II	18	23			
	III	25	17			
Handwriting	I	28	20	1.12	2	N.S.
	II	24	22			
	III	29	17			
Work Habits	I	27	24	2.65	2	N.S.
	II	25	23			
	III	32	16			
Citizenship Practices	I	30	21	2.12	2	N.S.
	II	22	26			
	III	28	20			

* Worst equals marks of C, D, F; best equals marks of A, B.

TABLE 6

MARKS AND CHI SQUARES ON REPORT CARD AT END OF SECOND GRADE FOR CHILDREN WITH DIFFERENT AMOUNTS OF EDUCATIONAL BACKGROUND: GROUP I NURSERY AND KINDERGARTEN, GROUP II KINDERGARTEN ONLY, GROUP III NEITHER NURSERY NOR KINDERGARTEN

SUBJECT	GROUP	FREQUENCIES		CHI SQUARE	d.f.	P
		(worst)*	(best)			
Arithmetic	I	24	21	5.90	2	>.05**
	II	24	20			
	III	34	11			
Spelling	I	13	27	11.50	2	<.01
	II	16	27			
	III	28	14			
Social Studies	I	21	21	14.23	2	<.01
	II	20	24			
	III	36	8			
Science	I	22	20	16.59	2	<.01
	II	21	28			
	III	38	6			
Speaking	I	23	21	7.73	2	<.05
	II	21	23			
	III	33	11			
Reading	I	24	20	9.23	2	<.01
	II	25	19			
	III	37	8			

* Worst equals marks of C, D, F; best equals marks of A, B.

** P=.05 for χ^2=5.99.

TABLE 6 continued

SUBJECT	GROUP	FREQUENCIES		CHI SQUARE	d.f.	P
		(worst)*	(best)			
Written Expression	I	23	17	4.20	2	N.S.
	II	28	14			
	III	33	9			
Art	I	13	28	3.15	2	N.S.
	II	16	27			
	III	22	22			
Health Education	I	17	25	3.71	2	N.S.
	II	16	28			
	III	23	18			
Handwriting	I	21	24	0.13	2	N.S.
	II	22	22			
	III	23	23			
Music	I	19	22	9.40	2	<.01
	II	18	25			
	III	28	10			
Physical Education	I	18	21	0.62	2	N.S.
	II	19	24			
	III	19	17			

* Worst equals marks of C, D, F; best equals marks of A, B.

TABLE 7

PREDICTIVE CORRELATIONS BETWEEN PERSONALITY MEASURES† AT A GIVEN POINT IN TIME AND INTELLECTUAL ACHIEVEMENT A YEAR LATER

PERSONALITY MEASURES	STANFORD BINET	DRAW-A-MAN	PEABODY PICTURE VOCABULARY
		NURSERY TO KINDERGARTEN	
	(N=46)	(N=98)	(N=98)
DS	-.64**	-.06	-.12
AAS	.23	.36**	.43**
AGG	.08	-.20*	-.11
DC	-.22	-.15	-.25*
		KINDERGARTEN TO FIRST GRADE	
	(N=86)	(N=86)	(N=86)
DS	.12	.16	.15
AAS	.18	.24*	.15
AGG	-.02	-.04	.01
DC	-.18	-.13	-.04
		FIRST GRADE TO SECOND GRADE	
	(N=90)	(N=90)	(N=90)
DS	.11	-.19	-.04
AAS	.54**	.48**	.31**
AGG	.03	-.23*	.04
DC	-.46**	-.48**	-.17

**p $<.01$
* p $<.05$
† Dependency Striving (DS), Autonomous Achievemant Striving (AAS), Aggression (AGG), Dependency Conflict (DC)

Study 2

The Effects of Nurturance Deprivation in Lower Class Negro Children*

The present study was undertaken to investigate the effect of a child's background of nurturance deprivation on his sensitivity to renewed and relatively brief experiences of nurturance deprivation. The research literature offers two alternative hypotheses which predict opposite results. One of these hypotheses predicts that children with a greater background of nurturance deprivation will be insensitive to brief, renewed experiences of deprivation. In particular, this hypothesis suggests that a twenty minute period of nurturance deprivation such as that used in the early studies by Gewirtz and Baer (1958, a,b) will not affect children with a history of nurturance deprivation. This reasoning is in line with the results of the study by Spitz and Wolf (1946) and of a study by Zigler and Williams (1963). The former study found that infants who were rated as having "good" mothering were more likely to develop severe depression when they lost their mothers than infants who had "bad" mothering. Zigler and Williams found that children from a background of less severe deprivation were most affected by renewed deprivation experiences.

The other hypothesis, based on the formulations of Beller (1959), and more recently Bronfenbrenner (1967), predicts that children with a history of more severe nurturance deprivation will be more sensitive to renewed experiences of deprivation than children with a background of less deprivation. Beller conceptualized the brief experience with nurturance deprivation as one which frustrates the dependency needs of a child, and consequently leads to heightened dependency behavior. There are two lines of evidence which, in conjunction with this conception, have led to the second prediction. The first (e.g., Allen, Dubanoski and Stevenson, 1966; Goldfarb, 1943; Rosenhan, 1966) indicates that children with greater deprivation in their background have heightened dependency drives in comparison to children with less deprivation in their background. The second indicates that children with higher dependency drives are most responsive to the frustration of their dependency needs (Beller, 1959; Hartup, 1958; Young, 1967). The inference to be drawn from these two lines of research and Beller's formulation would be that deprived children would be more responsive to a renewed deprivation experience than less deprived children.

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*The present paper was presented by Robert F. Davis and E. Kuno Beller at the 39th Annual Meetings of the Eastern Psychological Association in Washington, D.C. on April 19, 1968.

Furthermore, Bronfenbrenner, drawing principally upon evidence from animal research, has developed two similar predictions. The first of these asserts that:

> The impact of early drive deprivation in later life is maximized when the organism is again placed in a deprived state....this also means that an organism that has been subjected to early drive deprivation is more susceptible to drive deprivation in later life than one that was not deprived originally (p. 82).

And secondly he also hypothesizes that:

> An organism that has been subjected to early drive deprivation can in later life be more readily motivated to learn by again placing it in a deprived state (p. 82).

Bronfenbrenner noted that there had been only indirect evidence from human research to support this position. As will be evident in a moment, the current study clearly offers a more direct means of providing evidence for his and Beller's position, or for the first hypothesis.

The procedural framework from which this study has been derived goes back to the work of Gewirtz and has added refinements through the work of Beller and his students. Most of the original studies demonstrated that brief periods of social deprivation increased the effectiveness of adult approval and attention on such simple learning as shift-in-position habits. These findings led some to conclude that social deprivation experiences functioned as social arousal factors for children in learning situations. The position taken in the present study holds that this latter contention is somewhat tenuous, since the learning tasks employed in most previous research involved shifts-in-motor habits, rather than the sort of learning that is usually associated with academic achievement in the classroom. The design in the present study was, therefore, developed with the aim of employing a learning task which involved cognitive functioning more explicitly than had been true of most previous research in this area. Thus this study not only set out to answer the question as to whether a background of severe nurturance and social deprivation would make the lower class child more or less sensitive to social arousal factors but also to determine whether, if such arousal occurred, that it could be demonstrated to have affect on the child's cognitive functioning.

Finally, the independent variables selected to fulfill the goals of this investigation were: (1) the amount of nurturance deprivation in the child's history; (2) the amount of induced or social deprivation; and (3) the type of reinforcement employed in the learning situation. For purposes of this study, nurturance deprivation and social deprivation were defined in terms of deficiencies in attention, care and positive social interaction of adults with their children.

Subjects:

Two hundred first grade boys with an average age of seventy-nine months served as subjects in the present study. All children were Negro and were drawn from first grade classes of three schools located in a North Philadelphia Negro slum area.

Procedure:

Background Deprivation: Ratings of background deprivation were obtained from teachers, home-school coordinators and other school personnel who had contact with the child and his family. Two seven-point scales were constructed for this purpose. One scale extended from parental care to neglect and the other from parental interest to distinterest. Multiple ratings were obtained on all children. The reliability between raters was $r = .61$. On the basis of these background deprivation scores all children were divided into above and below median groups. The children from each of these two groups were then assigned randomly to increasing periods of experimentally induced deprivation, that is 0, 5, 10, 15 or 20 minutes of attention withdrawal. Thus the final study involved one hundred children with above and one hundred children with below median nurturance deprivation in the home.

Induced Deprivation: Each child was taken by an adult experimenter, a Negro woman, to the testing room. During the trip from classroom to testing room, minimal, but positive, social interaction was afforded. After entering the testing room, the experimenter found a note reminding her to make a telephone call. She instructed the child to wait until she completed her telephone call. The adult then went through a simulated telephone conversation of random comments, ignoring the child completely for 5, 10, 15, or 20 minutes. The child was left seated without any toys to offer substitute gratification for the attention withdrawal. Immediately following the period of nurturance deprivation, the experimenter initiated a problem-solving learning task. For those children who received no attention withdrawal, the problem-solving task was initiated immediately upon entering the testing room.

The Problem-Solving Task: The problem consisted of finding an object hidden under one of three boxes that differed from one another only in size. The principle for the solution was that the object was always hidden under the middle-sized box. The child was told:

> There is a way you can always tell which box it is hidden under. I always put it under the correct box.

The experimenter permitted the child to correct errors on each trial. The boxes were presented in a standardized random order on thirty successive trials.

Conditions of Reinforcement: The learning task was presented under two conditions: Social reinforcement and no social reinforcement. Under the condition of social or extrinsic reinforcement, the child was asked to point to the box which hid the object. The child was informed by the adult whether his pointing response was correct or incorrect. When his response was incorrect, he was encouraged to try again and when he made the correct response, he received confirmation and verbal praise for his achievement, consisting of the comments, "good," and "very good." Under the condition of intrinsic or no social reinforcement, the child was encouraged to pick up the box and see for himself whether his response was correct or not. Once he made the right response and discovered the object, he received no other reinforcement. That is, in the intrinsic condition the child had to rely on the perception of his own performance to discover the correct solution. The experimenter was trained to provide as little social reinforcement as possible in terms of such behavior as gestures, smiles, etc., under the intrinsic condition. Whereas under the extrinsic condition when the child made a correct response, the experimenter not only provided the verbal responses but indicated her approval through broad smiling and other facial and body gestures. The children were assigned randomly to the two conditions of reinforcement. Thus, the final design consisted of two degrees of background deprivation, five periods of induced deprivation, and two conditions of reinforcement. The dependent variable was the number of errors made in each block of five trials.

Results: First of all, although this was not part of the original hypothesis, intelligence was found to be related to background deprivation. That is, children with high parental neglect and disinterest had significantly lower IQ scores on the Peabody Picture Vocabulary Test than the less deprived group. The difference amounted to an average of 11 IQ points. However, there was no significant correlation between IQ and success or failure on the problem-solving task (r = -.08). Hence, all other conditions could be related to the problem-solving task without being artifacts of the child's IQ.

The outcome of the pertinent parts of a 2 x 2 x 5 x 6 factorial analysis of variance is presented in Table I. First conditions of reinforcement affected problem-solving. Children in this study performed better on a problem-solving task under conditions of social rather than non-social reinforcement. However, the reinforcement condition interacted neither with background nor induced deprivation. Second, by themselves neither induced nor background deprivation affected problem-solving performance. However, and this was the basic finding of this study, background deprivation did interact significantly with situationally induced deprivation in their effect on problem-solving performance. The precise nature of this interaction is presented in Figure I. Under conditions of minimal or no social arousal, children with a background of less nurturance deprivation demonstrated a definite superiority in cognitive performance. However, as the amount of induced deprivation was increased, differences in performance changed sharply. The increased deprivation had a positive effect only on children with a more deprived home background. These children not only improved as the social arousal condition increased, but actually tended to perform better than the less deprived children after maximal social arousal, that is, after 20 minutes of attention withdrawal. This latter difference was significant at the p less than .06 level. There was no evident effect of increased situational deprivation on the part of the children from less deprived backgrounds.

TABLE I

Analysis of Variance of Errors on a Problem-Solving Task During Successive Blocks of Trials with Varying Degrees of Background Deprivation, Different Reinforcement Conditions and Varying Amounts of Attention Withdrawal

Source	df	MS	F
Between Subjects	199	19.42	
A (Background Deprivation)	1	35.02	1.87
B (Reinforcement)	1	119.70	6.38*
C (Attention Withdrawal)	4	16.08	1
AB	1	9.19	1
AC	4	49.49	2.63*
BC	4	6.57	1
ABC	4	9.59	1
Subj. w. groups (error between)	180	18.75	

* p .05

Discussion: It is clear that the second rather than the first of the two hypotheses was supported by these data. As predicted by the second hypothesis, children with a history of high background deprivation were more sensitive than children with less background deprivation to renewed experiences of deprivation. These findings strongly support the hypotheses set forth by Bronfenbrenner (1967) concerning the effects of early deprivation on susceptibility to later deprivation. And furthermore, this study tends to support the theoretical view that early social deprivation becomes an instigator of heightened dependency drive and that renewed deprivation experiences, or social arousal, affects the dependency motivation of more deprived children which, in turn, results in better cognitive performance. The question must be raised at this point as to why heightened dependency motivation should lead to such better performance. It would appear that the answer is the same as in the case of socialization, in which the child modifies his behavior to please the adult. In the situation under consideration here, the child's increased dependency leads him to try harder to gain the praise and attention of the experimenter by performing better on the problem-solving task. This theoretical point of view would have been more firmly established if, under conditions of deprivation, social reinforcement had been more effective than intrinsic reinforcement in leading to increased cognitive performance as it interacted with the two types of deprivation. One possible explanation for the failure of a differential effect for social reinforcement, particularly in children with more background deprivation, might be simply that deprivation led to such a great desire to please the experimenter that this strong motivation outweighed differences in reinforcement condition, that is, even in the intrinsic condition, the child had the opportunity of gaining some attention from the adult who was no longer ignoring him, and at least was interacting with him, though not offering specific praise.

It is also possible that an adaptation interpretation could be made of the reported findings. That is, the more deprived children simply may have needed more time to become accustomed to a strange situation before being able to function effectively. This possibility suggests the inclusion in future research of a further condition, namely, that of having more and less deprived children stay in the situation 5, 10, 15 or 20 minutes without being deprived of attention but, instead, having continuing interaction with the experimenter. If, as the number of minutes of social interaction was increased, these children's cognitive functioning also improved, then it would have to be considered that an adaptation mechanism was the more likely process operating and that the deprivation experience itself was not the basic factor.

It is also important to make note of the fact that the present study used a cognitive task which was more akin to the tasks involved in a classroom and thus differed considerably from the motor tasks used by most previous researchers such as Gewirtz and Zigler, or the measure of anaclitic depression used by Spitz and Wolf.

In conclusion, this study was able to differentiate two groups of children on the basis of a history of nurturance deprivation. The level of cognitive functioning of these two groups, as measured by a standard intelligence test, was significently different. Prior to experimental manipulation, the two groups performed in quite different fashions but became more equal in their cognitive performance after the treatment procedure. These results are particularly relevant to intellectual achievements since they are reflected in performance on a task of greater cognitive complexity than that typically used in most previous research involving social deprivation, reinforcement and learning.

It is clear that these results support the view that social deprivation leads to a lessening of cognitive development and decreased intellectual performance, under normal circumstances. The results also demonstrate, however, that these children can be motivated to perform as well as their less deprived peers. The theoretical position which is most clearly substantiated is that of Beller, Bronfenbrenner, and others who view social deprivation as an instigator of heightened dependency drive levels. More speculative but also most likely is the view that it was the effects of a social arousal condition on dependency drive which affected cognitive performance.

4

REFERENCES

Allen, S., Dubanoski, R. A., and Stevenson, H. W. Children's performance as a function of race of E, race of S and type of verbal reinforcement. Journal of Experimental Child Psychology, 1966, 4, 248-256.

Beller, E. K. Exploratory studies in dependency. Transactions of the New York Academy of Sciences, 1959, 21 (Ser. II, No. 5).

Bronfenbrenner, J. Early deprivation in mammals and man. In Newton, G. Ed. Early experience and behavior. Springfield, Ill.: C. C. Thomas, 1968.

Gewirtz, J. L., and Baer, D. M. Deprivation and satiation of social reinforcers as drive conditions. Journal of Abnormal and Social Psychology, 1958, 57 165-172 (b).

Goldfarb, W. The effects of early institutional care on adolescent personality. Journal of Experimental Education, 1943, 12 106-129.

Hartup, W. W. Nurturance and nurturance withdrawal in relationship to the dependency behavior of pre-school children. Child Development, 1958, 29, 191-201.

Rosenhan, D. L. Effects of social class and race on responsiveness to approval and disapproval. Journal of Personality and Social Psychology, 1966, 4, 253-259.

Spitz, R. A., and Wolf, K. Anaclitic depression: An Inquiry into the genesis of psychiatric conditions in early childhood. Psychoanalytic Study of the Child, 1946, 2, 313-342.

Young, A. Problem-solving in preschool children as a function of motivation and type of reinforcement. Unpublished doctoral dissertation, Temple University, 1967.

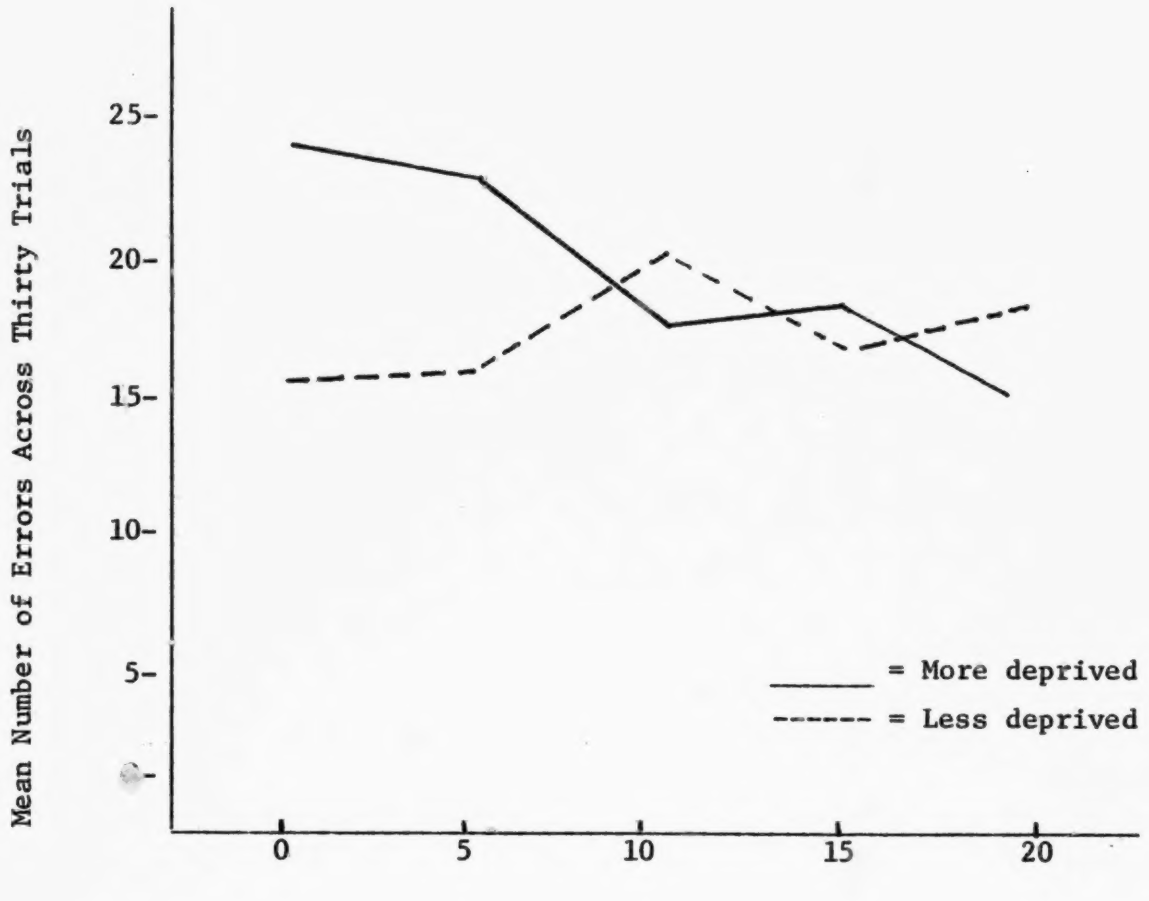
Zigler, E., and Williams, J. Institutionalization and the effectiveness of social reinforcement: A three year follow-up study. Journal of Abnormal and Social Psychology, 1963, 66 197-205.

Addendum - Proposed Study

It is of both theoretical and practical importance to replicate this study in order to resolve the issue of deprivation versus adaptation. A replication of this study would follow precisely the experimental design and procedure employed in the original study. The major modification will consist of an addition of 200 subjects with differing amounts of background deprivation exposed 0, 5, 15, and 20 minutes of continuing social interaction with an adult experimenter without deprivation of attention. The child will be given choices of playing with puzzles, with blocks, and with crayons. During the four different periods of the experimental sessions, the adult experimenter will take notes but make herself available to the child as the child desires. The statistical analysis would follow precisely the same design as in the previous study.

Practical implications: The proposed study may yield decisive evidence as to whether a need for attention or anxiety over novel and strange situations are the critical motivational and emotional factor influencing the performance on intellectual achievement tasks in lower class Negro children. Depending on the outcome of the proposed study, it will enable educators of this group of children to control novel learning situations and test situations so as to obtain a minimal or optimal measure of the child's potential intellectual performance level. Specifically, if the deprivation hypothesis is confirmed, it will be advantageous to test a child with a background of severe nurturance deprivation at a time when the child has not been exposed to a great deal of attention and affection from adults prior to the testing situation. If the proposed study supports the adaptation hypothesis, then the child's performance can be improved by testing him after he has been given considerable opportunity to become familiar with the testing situation and with the person carrying out the test.

One of the outstanding characteristics of performance on intellectual tests in lower class Negro children has been not only a depressed level but also a much greater variability and range in performance than is usually found in middle class children. It is quite possible that the lack of control of a child's need for attention or his anxiety over strange situations has contributed to this heightened variability between children. The present study may contribute greatly to a better understanding and control of this as yet poorly understood variability in lower class Negro children.



Minutes of Attention Withdrawal

Figure 1. Profile of the effects of background deprivation for different amounts of attention withdrawal.

PILOT STUDIES

Prior to undertaking Study 3, a series of pilot studies has been carried out. Several of these studies are worth reporting, because they dealt with critical issues.

Study I: This pilot study investigated the feasibility of carrying out two comparable learning tasks with the same child under two opposite conditions of reinforcement, i.e., extrinsic-social and intrinsic-non-social. We also wanted to see whether learning under the intrinsic-non-social condition of reinforcement was superior to learning under the extrinsic-social condition of reinforcement.

Subjects: Twenty first grade lower class children served as subjects in the present pilot study.

Procedure: The twenty subjects were subdivided into four groups to control for order of conditions of reinforcement and for order of learning tasks. Half of the subjects received extrinsic-social reinforcement first, and the other half intrinsic-non-social reinforcement first. Half of the subjects received the problem-solving task with the middle-sized box as a concept to be learned and the other half received the learning task with a single right-left alternation as the concept to be learned. A minimum of one hour elapsed between presentation of the first and second learning tasks.

Results: The two different learning tasks yielded a satisfactory range in the rate of learning within each of the children. Order seemed to have little if any effect. However, the most important finding in this pilot study was that learning under conditions of intrinsic-non-social reinforcement emerged as being superior to learning under conditions of extrinsic-social reinforcement. This conclusion is based on findings presented in Table 1. It can be seen from inspection of this table that almost all children (eight out of nine) who were able to learn under intrinsic non-social conditions of reinforcement were also able to learn under extrinsic-social reinforcement. Nine children who were able to learn under conditions of extrinsic-social reinforcement failed to learn under conditions of intrinsic-non-social reinforcement. Two children were unable to learn under either condition of reinforcement. Thus almost fifty per cent of these children who were able to learn under conditions of external prompting and reward were as yet unable to turn the learning process into a self-rewarding experience. On the other hand, almost all the children who had reached the stage on which the pursuit of knowledge or learning becomes a self-rewarding experience were also able to learn under the conditions of external promptings and rewards. As indicated earlier, these findings will be tested in our larger study on 192 subjects with age, social class, and ethnic background controlled.

Study II: This pilot study was carried out to remove certain doubts we had concerning the presence of artifacts that made our condition of extrinsic-social reinforcement the easiest and our condition of intrinsic-non-social reinforcement the most difficult for learning of problem-solving tasks. One possible artifact that might make the intrinsic-non-social condition of reinforcement a more difficult one was that the child who under that condition is encouraged to pick up the box and see for himself whether he had guessed the correct box (under which the treasure is hidden) might pick up the box impulsively without looking, and therefore find it more difficult to learn stimulus discrimination under that condition. In contrast, under the extrinsic condition, the child only points to the box that he guesses as being the correct one without obstructing his perception of the relevant cues which he has to discriminate. We therefore introduced a condition under which the child was asked to first point to the box that he considers to be the correct one and wait a few seconds before he picks up the box to check whether he has made the correct choice.

Subjects: Fifty-seven lower class Negro boys and girls attending Get Set Centers served as subjects in the present experiment.

Procedure: One third of the subjects was randomly assigned to our extrinsic-social condition of reinforcement, a second third to the regular intrinsic-non-social condition of reinforcement and a third third to our control condition which were instituted to check on the possibility of an artifact.

Results: It can be seen from Figure 1 that the presence of such an artifact can be safely ruled out on the basis of the pilot study we have carried out. The condition under which the child was made to first point to the box and then pick up the box differed in no way from our intrinsic-non-social condition in which the child was permitted to do his own timing with regard to picking up the box he considered to be the correct one. In sharp contrast to both these conditions, the extrinsic-social reinforcement condition yielded clearly better learning over thirty trials.

Study III: In order to see whether our task would yield a satisfactory range in the rate of learning over the entire age range from four to eight in our projected study, we administered the task in which the child had to discover the principle of middle-sizedness under our two extreme conditions, that is, intrinsic-non-social and extrinsic-social to groups of four and eight year olds.

Subjects: Sixteen third grade lower class Negro children were selected randomly from two classrooms. Half of the children were assigned randomly to the extrinsic-social condition of reinforcement and fifty per cent to the intrinsic-non-social condition of reinforcement. The thirty-eight lower class Nursery children from Study II who were administered the same problem-solving task under two extreme conditions of reinforcement were utilized for the purposes of comparison in this third pilot study.

Procedure: Thirty trials were administered under our extreme conditions of reinforcement.

Results: Figure 2 shows that our two extreme conditions of reinforcement differentiated more clearly the rate of learning in our youngest group than in our projected oldest group of children. A second important finding that can be seen from inspection of Figure 2 points to developmental implications of our two conditions of reinforcement, i.e., third grade children learned much better than pre-school children under conditions of intrinsic reinforcement. By contrast, the rate of learning under extrinsic-social conditions of reinforcement was approximately the same for both age groups. Thus, the findings obtained in this pilot study strongly supported two of our hypotheses which will be tested in our extensive projected study.

STUDY 3

A Developmental Study of Cognitive Style and Problem-Solving Behavior in Lower and Middle Class Negro Children

A major aim of the educational process in our society is to make learning, problem-solving, and the pursuit of knowledge and discovery a highly motivated and self-rewarding experience. Although there are all kinds of external rewards, threats, and punishment linked to learning especially during the first two decades of life, it is the aim of the educational process to instill in the child during the earliest years a need to explore his environment and to achieve mastery in the various areas of intellectual pursuit without the continual promise of external rewards and threats.

The proposed study will put to an extensive test several techniques which have been constructed for the purpose of measuring the decreasing role of the self-rewarding nature of intellectual pursuit in the years immediately preceding and following the onset of formal education.

In this series of studies, conducted with a number of students, I have investigated the effects of variations in conditions of reinforcement on problem-solving behavior in lower class Negro children attending Nursery, Kindergarten, and First Grade. These studies have consistently demonstrated in these children the greater effectiveness of extrinsic social reward than of intrinsic non-social reinforcement in the learning of cognitive tasks. However, the effectiveness of intrinsic reinforcement on cognitive learning and performance in kindergarten children was found to be greater in those children who attended Nursery than in those children who entered Kindergarten without prior schooling. Intrinsic reinforcement was also found to be more effective in nursery children who attended Get Set classes and who demonstrated a greater ability to benefit from their educational experience by obtaining a larger gain in intellectual achievement than other children in the national evaluation program of Head Start.

A next phase in this series of studies is being planned to clarify further the value of the distinction between extrinsic-intrinsic conditions of reinforcement as a way to assess a child's readiness to engage in intellectual pursuit with and without external prompting and rewards. Several new steps are being introduced in this study. First of all, the study will control social class and ethnic background of the child, as well as the sex and ethnic background of the experimenters. Secondly, the study will encompass five age levels, i.e., pre-kindergarten, kindergarten, first, second, and third grade. As a third step, the study will break down further the two conditions of reinforcement in order to isolate more clearly the factors of social versus extrinsic reinforcement. This will be done in the following way. The intrinsic condition will be administered both with and without social reinforcement, that of extrinsic non-social has not been used by us before and will be as follows. A green light will be used to indicate to the child that he has made the correct response, that is, that he has pointed to the correct box. The light will not be accompanied by verbal praise or social reinforcement. For the case of extrinsic with social reinforcement the examiner will provide both the signal for the correct response by saying "This is correct" and the social reinforcement in the form of praise.

A fourth new step will consist of including two personality variables which are expected to influence the relative effectiveness of extrinsic versus intrinsic reinforcement on learning in children. As a child grows older and the incentives for his intellectual pursuits become more internalized and intrinsically rewarding, the rate and extent of this change is likely to be affected by a number of different factors, some of which have their source in the external physical or social environment while others function from within the child. As indicated above, we plan to control external sources, that is, the social class and ethnic background of the child and the sex and ethnic background of the experimenter. As for the internal sources, we have addressed ourselves so far only to sex and, in a more general way, the age or maturation of the child. It is quite possible that the relative effectiveness of extrinsic and intrinsic reinforcement is also influenced by the child's personality characteristics and by changes in these personality characteristics on successive developmental stages. The two personality characteristics which we have selected for the proposed study are field dependence and impulse control. Field dependence is particularly relevant since this concept of cognitive style deals with a person's disposition to be dependent on the external environment for cues to his behavior. This dimension is clearly relevant to our study. By using this dimension in our study we shall be able to investigate to what extent a child's behavior in our experimental learning situations reflects a more general personality tendency on the child's part. The embedded figure test developed by Stephen Karp will be used with all children to obtain a measure of their field dependence. The other personality variable to be employed in our study is impulse control. It has been observed generally as well as documented in research that impulse control is lowest at birth and increases as the child matures. Another general observation with regard to impulse control has been that difficulties in impulse control are associated with greater suggestibility by environmental factors as well as with learning problems. An individual with poor impulse control simply cannot trust his inner promptings and therefore must rely on external signals or approval for his actions. Evidently this dimension is also highly relevant to the differential effectiveness of our experimental conditions of extrinsic and intrinsic reinforcement. A measure of impulse control will enable us to determine to what extent a child's behavior in our learning situation might be influenced by a more general personality characteristic of the child, such as his impulse control. We plan to assess this factor by means of the "Draw-A-Line-Slowly Test".

We plan to obtain an IQ measure by means of the Peabody Picture Vocabulary Test on all our children. If this measure is found to correlate with success in problem-solving in our proposed study, it will be used as a covariate in our analysis.

The major hypotheses of this study are as follows:

(1) The relative effectiveness of extrinsic reinforcement and of social reinforcement will decrease with increased age and with higher social class ethnic background will not be a significant factor when social class is controlled. Intrinsic problem-solving strategies will show greater success with increased age and higher social class, and ethnic background will not make a difference as long as social class is controlled.

(2) Field dependence and impulsivity will be negatively correlated with age and IQ and positively correlated with extrinsic problem-solving and with the relatively greater effectiveness of social reinforcement. These two personality variables will be negatively correlated with success on our problem-solving task under conditions of intrinsic reinforcement.

Subjects: The study will be carried out on 640 children. One hundred and twenty-eight children will be selected on each of five age levels from four to eight years of age. Children will be subdivided into equal proportions within each age sample on the basis of sex, social class, and ethnic background. Each sample will be selected from a minimum of two and a maximum of four different classes in at least two different integrated schools on the basis of random tables. For the nursery or four year old group, Get Set Centers and private nurseries will be used to select the children for our study.

Procedure: Children from within social classes, ethnic backgrounds and age levels will be assigned randomly to the four different experimental conditions and to one of the four experimenters, i.e., male-female, white-negro. The problem-solving task will always be the same as described in

Study II, that is, the child will have to discover the principle that the treasure will always be hidden under the middle-sized one of three boxes. The position of the midddle-sized box will be varied randomly on each of thirty trials. Each trial will permit corrections for errors.

In order to determine the relative effectiveness of our conditions of reinforcement within a child we plan to use for a selected number of children a repeated measure design as follows. Those groups of four, six, and eight year old children who receive our two extreme conditions, that is, extrinsic-social and intrinsic non-social reinforcement, will be given an alternate problem-solving task with the opposite condition of reinforcement to the one they had received during the first run. All those children who receive extrinsic-social reinforcement first will be given an alternate task with intrinsic non-social reinforcement, while those who did the problem-solving task with intrinsic non-social reinforcement first will be given an alternate problem-solving task with extrinsic-social reinforcement on a second occasion. This aspect of the study will involve a total of 192 children on three age levels. The alternate task to be given with the opposite condition of reinforcement on the second occasion will consist of discovering the principle that the hidden object is to be found on the extreme right or left of three boxes, and that the position will systematically vary from trial to trial in a single alternation order.

The IQ test, that is, the Peabody Picture Vocabulary Test and the two personality tests, that is, the Embedded Figure Test and the Impulse Control

Test will be administered to all children in a controlled order.

Factorial designs of ANOVA will be used for the analysis of data. The factors will be the child's age, sex, social class, and ethnic background and the four experimental conditions, i.e., extrinsic-social reinforcement; extrinsic-no social reinforcement; intrinsic-social reinforcement; intrinsic-no social reinforcement. Interacting subject-experimenter effects of sex and ethnic identity will be analyzed separately.

TABLE 1: LEARNING* WITHIN THIRTY TRIALS ON TWO PROBLEM-SOLVING TASKS UNDER TWO CONDITIONS OF REINFORCEMENT.

Number of Subjects	CONDITIONS OF REINFORCEMENT	
	Extrinsic	Intrinsic
Two	failed to learn	failed to learn
One	failed to learn	learned
Nine	learned	failed to learn
Eight	learned	learned

* Criterion for learning was six successive errorless trials.

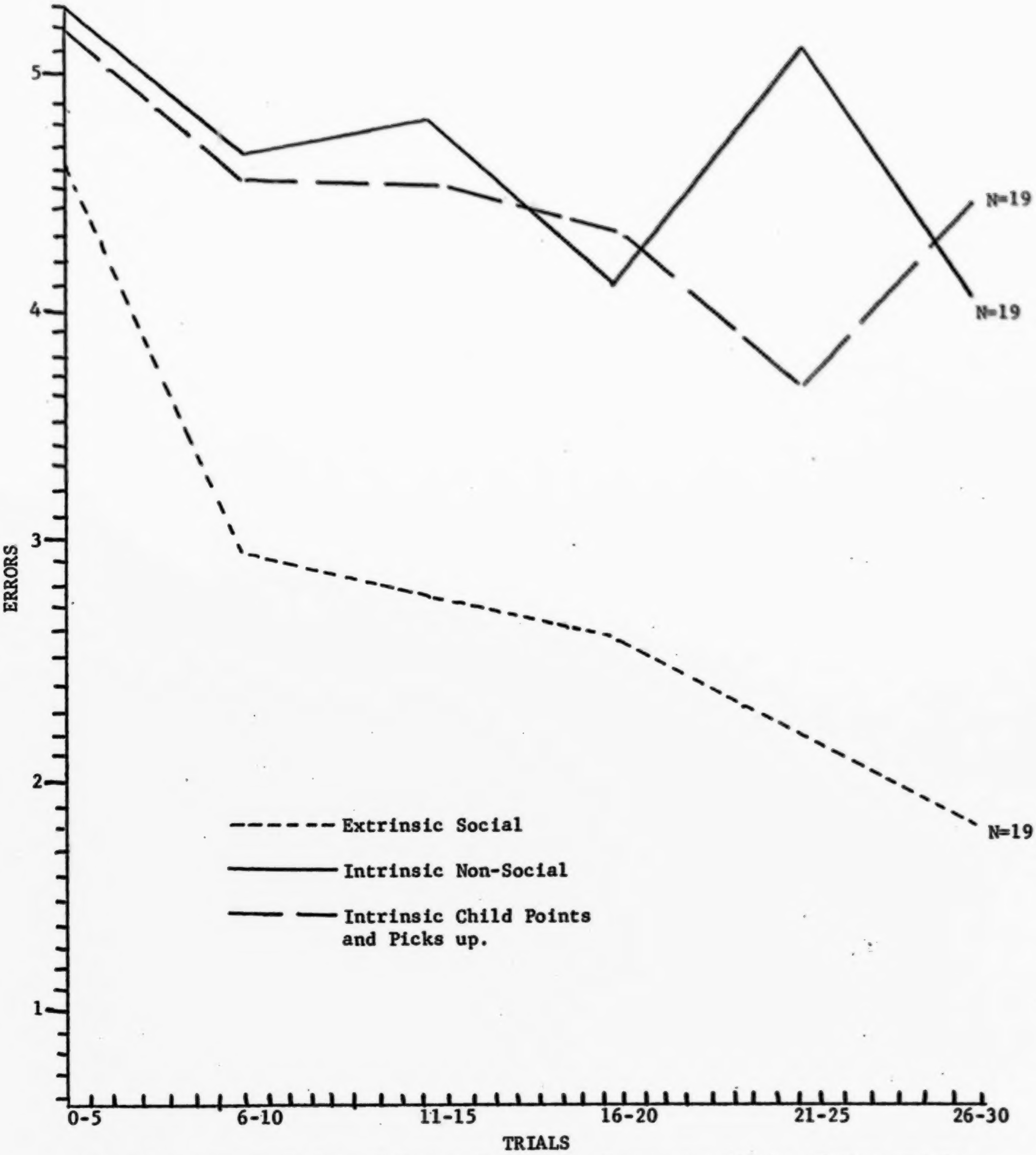


Figure 1. Average Number of Errors During Six Successive Blocks of Five Trials Each Under Three Conditions of Reinforcement for Fifty-seven Lower Class Negro Boys and Girls Attending Get Set Centers.

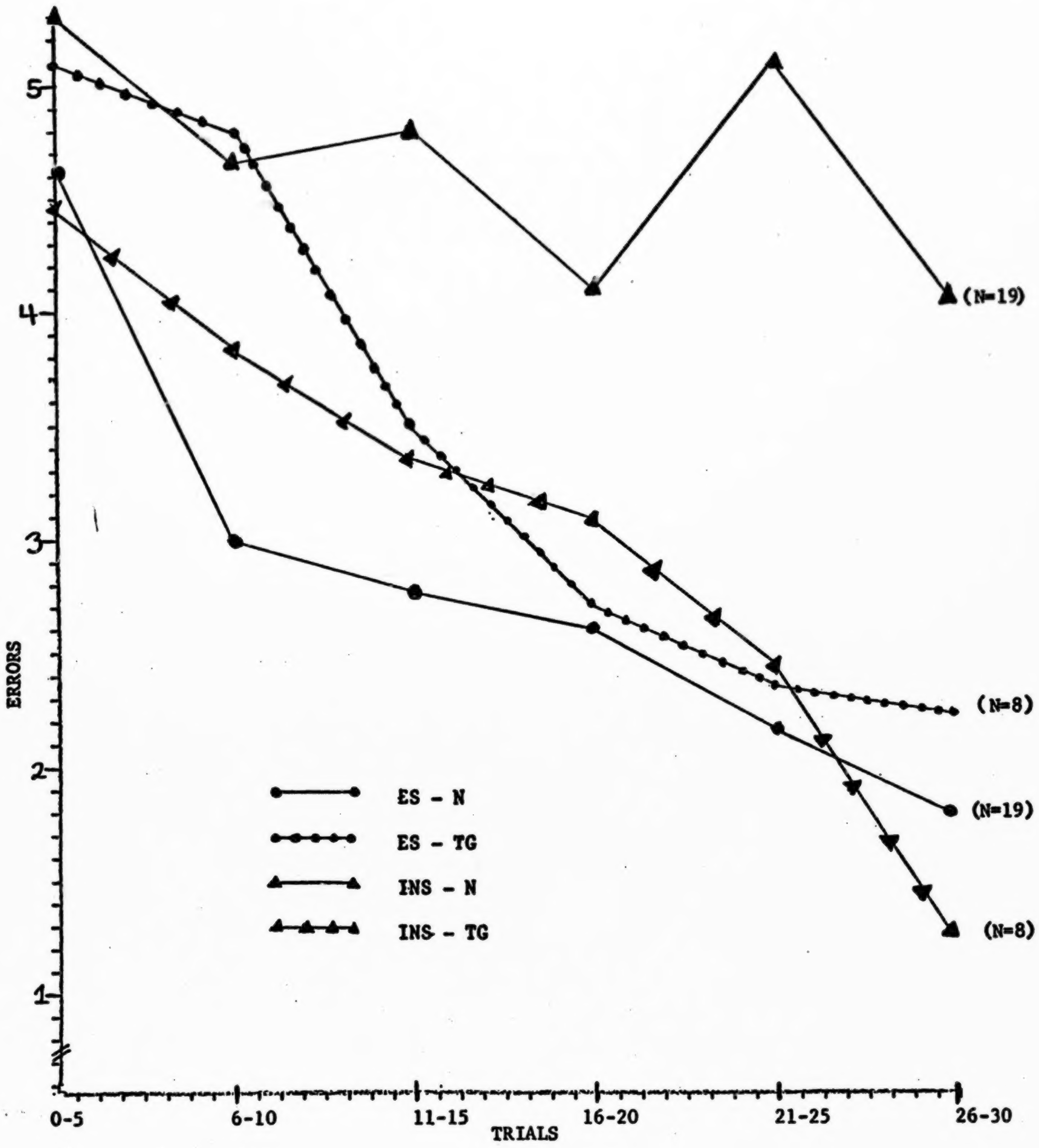


Figure 2. Average Number of Errors During Six Successive Blocks of Five Trials Each Under Two Conditions of Reinforcement (Extrinsic Social (ES) and Intrinsic Non-Social (INS)) for 38 Nursery (N) and 16 Third Grade (TG) Lower Class Negro Boys and Girls.

Study 4

Teaching Styles and Their Effects on Problem-Solving Behavior in Head Start Programs

This study was undertaken to validate a number of scales which we have constructed for the purpose of measuring styles of teaching and classroom climates. Two methods of validity were employed. One method consisted of asking the regional educational supervisor of the Summer Head Start Program to select three teachers whom she considered good and potentially effective teachers, and three other teachers whom she considered as lacking the strong points of the first three. After the supervisor had made the selection she was asked to state as explicitly as possible those characteristics of "good and effective" teachers that served as criteria for her selection. The information thus elicited from the supervisor will be reported in the procedure section below. The validation consisted of applying the scales we had constructed to the six teachers, and seeing whether our scales would differentiate between these two sets of teachers.

The second method of validation was that of predictive validity. In order to find out whether our scales checked effectiveness of teaching we tested certain predictions from our measures of teaching styles to variations in learning and performance on our intrinsic problem-solving task for children who had been exposed to different teachers.

Subjects: Eighteen teachers of Get Set and Head Start classes, 122 children attending six different Summer Head Start classes, and twelve different Get Set classes.

Procedure: Three of the six Summer Head Start teachers were selected by the regional Head Start Supervisor as "good and effective" teachers, while three other teachers were selected on the basis of lacking these characteristics. When the supervisor was asked to describe what she considered the essential characteristics of the three "good and effective teachers", she offered the following three characteristics: warmth, having a well-prepared program, and being child-oriented. The other three teachers, presumably, lacked these characteristics. Since two of our scales, namely, closeness to children and child versus group-oriented (see attached scales) corresponded almost exactly to "warmth" and "child-orientation" as defined by the supervisor; and since the third characteristic, namely, being well-prepared, was at least relevant to two of our scales dealing with curriculum we could expect valuable validity information from a comparison of the two sets of three teachers on the basis of their scores on our scales. As indicated earlier our second validity criterion consisted of predictions from our scales to the children's performance on the intrinsic problem-solving task. All children were administered thirty trials of our intrinsic problem-solving task. Our prediction was that successful performance on these tasks will be associated with high scores on our scales of approval, closeness to children, individual orientation, flexible classroom arrangement, encouraging exploration (in approach to learning), flexibility in programming, and low scores on our scales of control of children, control of materials by teachers, and distinction between work and play.

The same six observers who carried out observations in the previous study (Study 4) were rotated in pairs and assigned randomly to twelve observations in each of the six classrooms. The observations were the same as the ones described in the previous study (Study 4) and concentrated for fifteen minutes on the dependency sequences in the interaction between the observed child and his teacher (for observation categories see Study 4). The observations were always carried out by pairs of observers simultaneously in order to obtain reliability for both our observation categories of child-teacher interaction and our scales measuring teaching styles. However, observers scored teachers on the teaching style scales only twice, that is, after six and twelve observations of the same teacher.

Results: The data collected for this study have been processed and are currently being analyzed. Several findings have been assembled and will be reported in a preliminary way for the purpose of the present report.

In order to determine the empirical structure of our scales of Teaching Style we factor analyzed the data obtained on eighteen different Head Start teachers. The outcome of this factor analysis is presented in Table 1. Each correlation matrix, with squared multiple correlations as communality estimates, was subjected to principal axis factor analysis by means of the BMD-X72 factor analysis program. Oblique simple loading rotation was also performed with the number of factors rotated being determined by the number of initial factors with eigenvalues greater than unity.

An inspection of Table 1 shows that our scales yielded two fairly independent Factors (r = .22) for nine out of the ten scales which we have constructed. The first Factor may be described as a Social Factor and the second as a Curriculum Factor. On the basis of the first Factor it would seem that we can distinguish between teachers who are controlling, detached, oriented towards a group rather than an individual child, concerned with providing factual material, criticizing the child and finally discontent with their teaching functions as over against a teacher who gives the children a good deal of freedom, relates affectionately and sensitively to individual children, is more child oriented, encouraging individual children to explore and appear to enjoy their teaching function. On the basis of the second Factor, the Curriculum Oriented factor, we might distinguish between teachers who emphasize the distinction between work and play, who insist on a rigid arrangement of the classroom, and who emphasize routine planning with a minimum of spontaneity as over against teachers who let the children move freely between play and work, who let the classroom arrangements vary with activities and needs of individual children and who improvise spontaneously the curriculum. It has to be remembered that these factors emerged from the study of teachers in pre-school classes. Conceptually, the important conclusion to be drawn from the findings presented in Table 1 is that our scales do provide a meaningful pattern of teacher behavior which consists of a social interpersonal component and of a curriculum component.

The first validity test of our scales consisted of a comparison between the two groups of Head Start teachers selected as "good" and "poor" teachers by an educational supervisor. When we compared the two groups on our ten scales of teaching style, we found that eight of the ten scales differentiated the two groups of teachers in the predicted direction. (See Table 1) Thus the good teachers were characterized by giving the children more freedom, being more affectionate in their interaction with children, being more oriented towards the individual child, encouraging individual children, and finally enjoying their teaching function. With regard to curriculum, the group of good teachers were characterized by our scales as making less distinction between work and play, being somewhat less rigid in their classroom arrangement, and giving the children more opportunity to control materials than the group of teachers designated as poor teachers by the educational supervisor. Clearly the direction of these differences as determined by our scales would be what one would expect in distinguishing between good (warm) and poor (cold) teachers, particularly for pre-school classes.

The second validity test of our scales consisted of comparisons on success in problem-solving under intrinsic reinforcement conditions between the children of teachers who fell above and below median on our scales of teaching style. Figures 1 to 4 represent learning curves on our problem-solving tasks for children of teachers falling above and below the median on five of our scales on which a consistent difference between the two groups emerged. Inspection of Figures 1 to 4 shows that children of teachers who made less distinction between work and play (Figure 1), who interacted affectionately with the children (Figure 2), who were more flexible in their classroom arrangement (Figure 3), and more flexible in programming their instruction (Figure 4) performed better on our problem-solving task under conditions of intrinsic reinforcement than did children from teachers with opposite characteristics. In the one other instance in which a trend barely appeared to emerge, the trend went in the opposite direction of what we would have predicted. Children of teachers who appeared to be discontent with their teaching function performed better on problem-solving under conditions without social support than did children whose teachers did seem to enjoy their teaching function. On the remaining five scales no clear trend emerged in our comparisons.

One might conclude from these findings that our second validity test gave some support to our scales since forty percent of the scales had the predicted consequences for certain teacher characteristics to be associated with better problem-solving ability of children.

Implications for further study: The initial investigation of our scales has yielded both conceptual and empirical validity of the usefulness of classifying teacher behavior and as a predictive tool for pupil success on cognitive tasks. The scales enable us to distinguish between a social interpersonal interaction component and a curriculum component in teacher behavior. We plan to further apply these scales in conjunction with the intervention program which is being planned for the Head Start Centers at Temple University as well as two different Follow Through Programs being planned by the Philadelphia School System.

Table 1

Factor Analysis of Ten Scales of "Teaching Styles" Based on Data Obtained From Six Observers of Eighteen Head Start Teachers

Scales	Factor I	Factor II
Controlling Children	.94	
Closeness to Children	.84	
Individual Child Oriented	.70	
Approval Oriented	.92	
Encouraging Exploration	.76	
Enjoying Teaching	.87	
Work-Play Distinction		.87
Flexible Classroom Arrangement		.83
Flexible Curriculum		.60
Control of Materials by Children	.53	.52

Table 2

Average Scores of Three Good (Warm) and Three Poor (Cold) Teachers on Ten Scales of Teaching Style

Scales	Teachers Good (Warm)	 Poor (Cold)
Controlling Children (9-1)*	6.00	3.33
Closeness to Children (1-9)	5.70	3.90
Individual Child Oriented (1-9)	4.80	4.30
Approval Oriented (9-1)	3.40	4.70
Encouraging Exploration (1-9)**	5.10	5.60
Enjoying Teaching (9-1)	3.20	4.60
Work-Play Distinction (9-1)	5.08	4.00
Flexible Classroom Arrangement (1-9)	6.80	6.70
Flexible Curriculum (1-9)**	5.13	5.33
Control of Materials by Children (1-9)	4.20	3.30

* 1-9 indicates that high score means high on scale.
9-1 indicates that high score means low on scale.

** These two scales failed to go in the predicted direction.

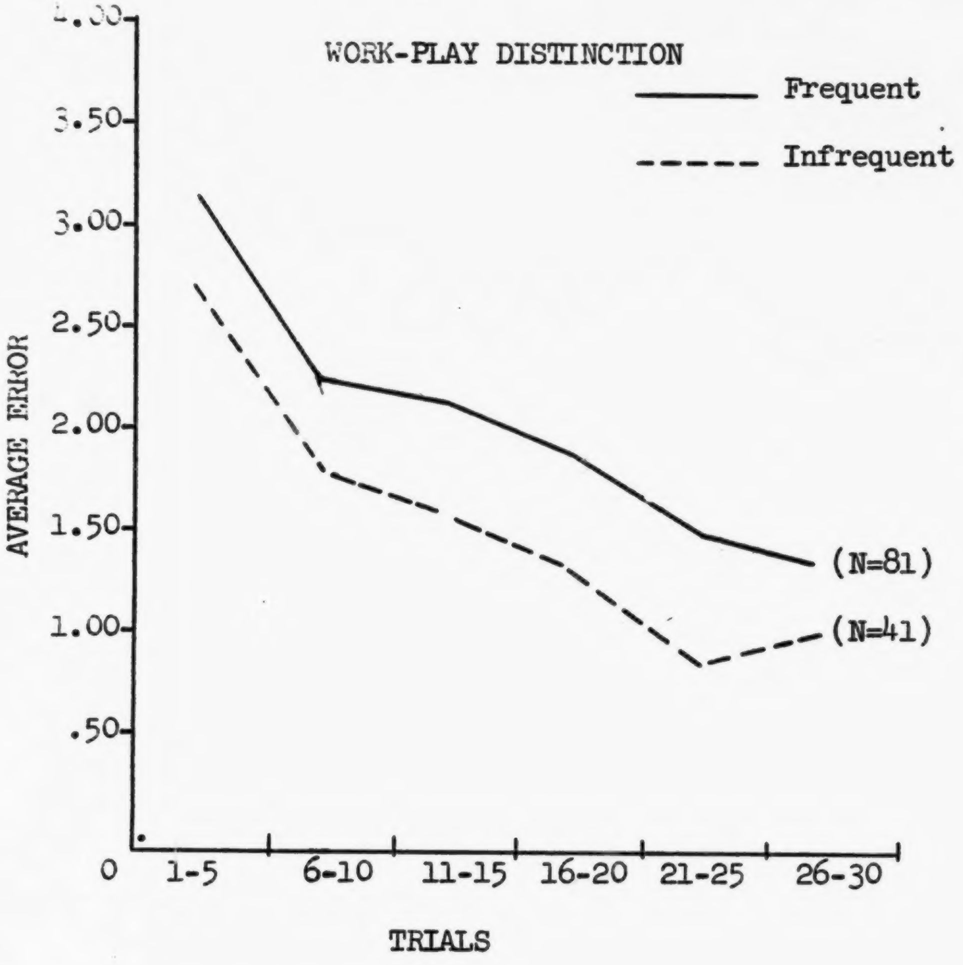


FIG. 1. Problem solving performance over 30 trials by children from teachers making frequent or infrequent work-play distinctions.

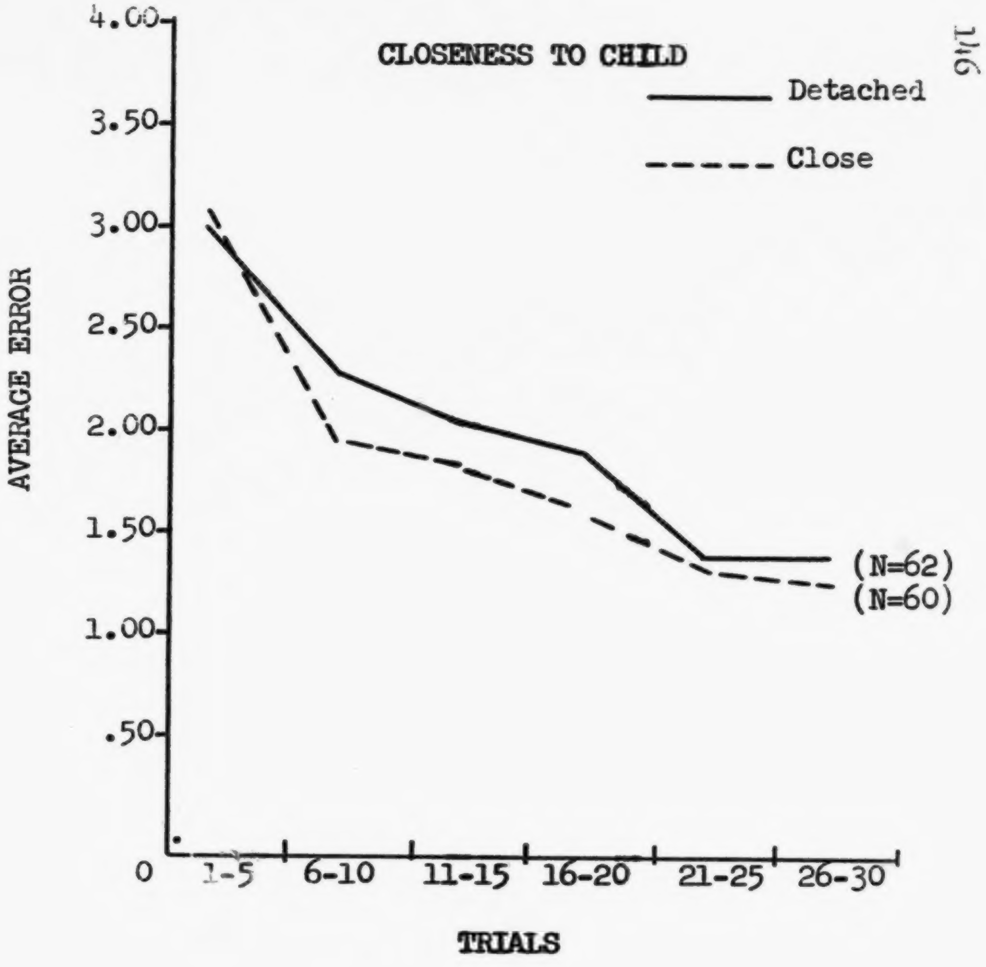


FIG. 2. Problem solving performance over 30 trials by children from teachers who are predominately detached or close to the child.

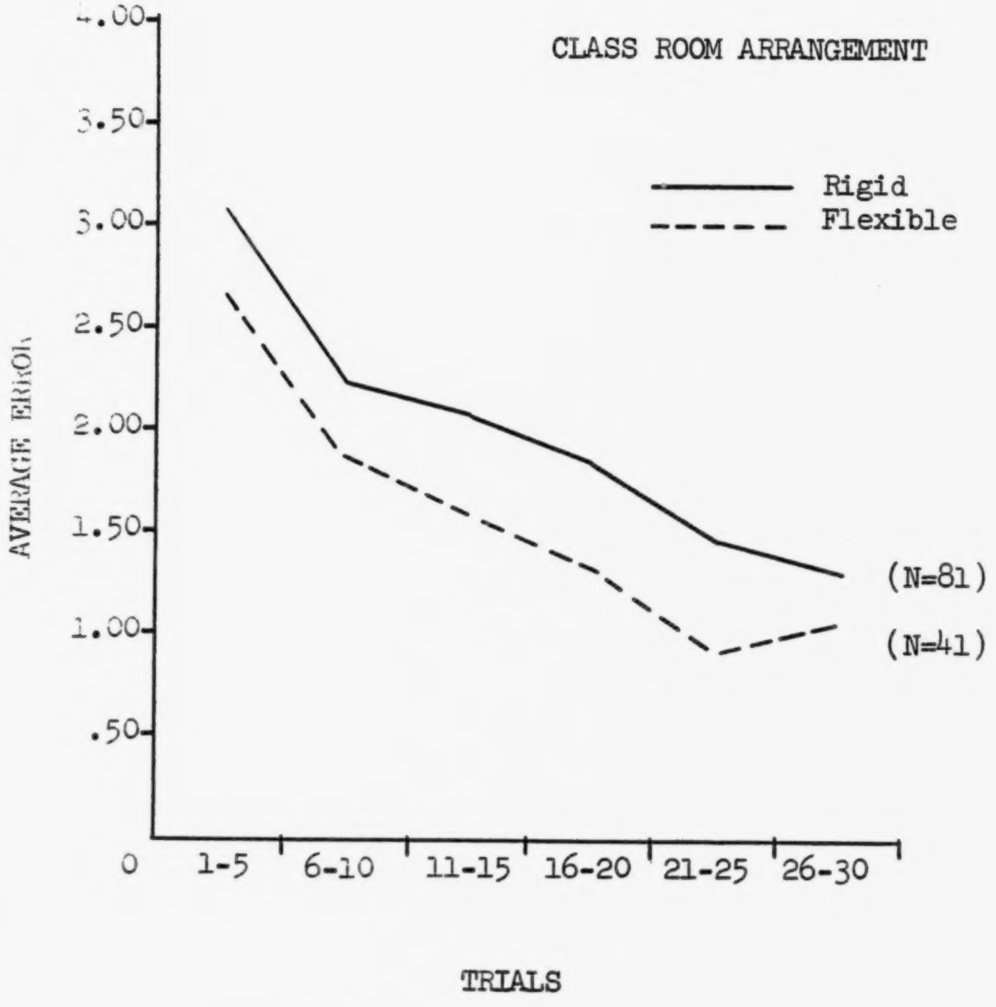


FIG. 3. Problem solving performance over 30 trials by children of teachers maintaining rigid or flexible classroom arrangements.

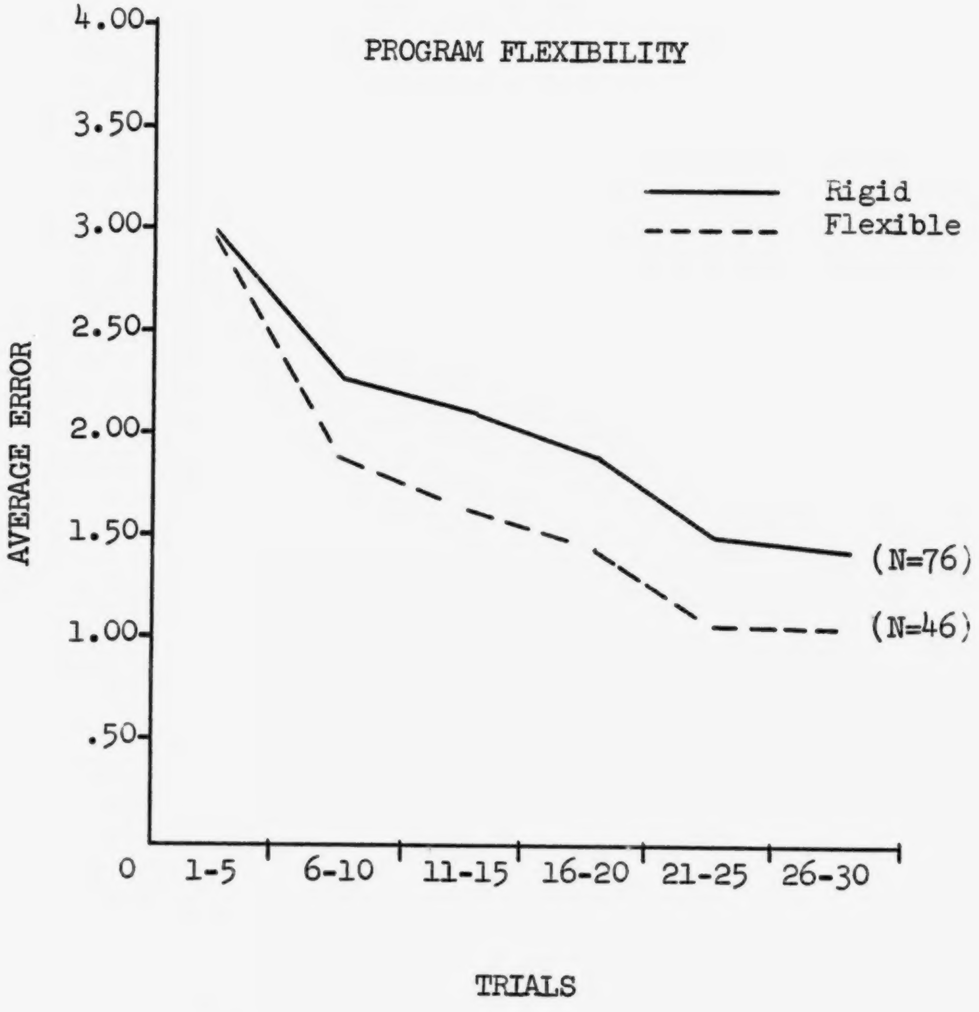


FIG. 4. Problem solving performance over 30 trials by children of teachers maintaining rigid or flexible teaching programs.

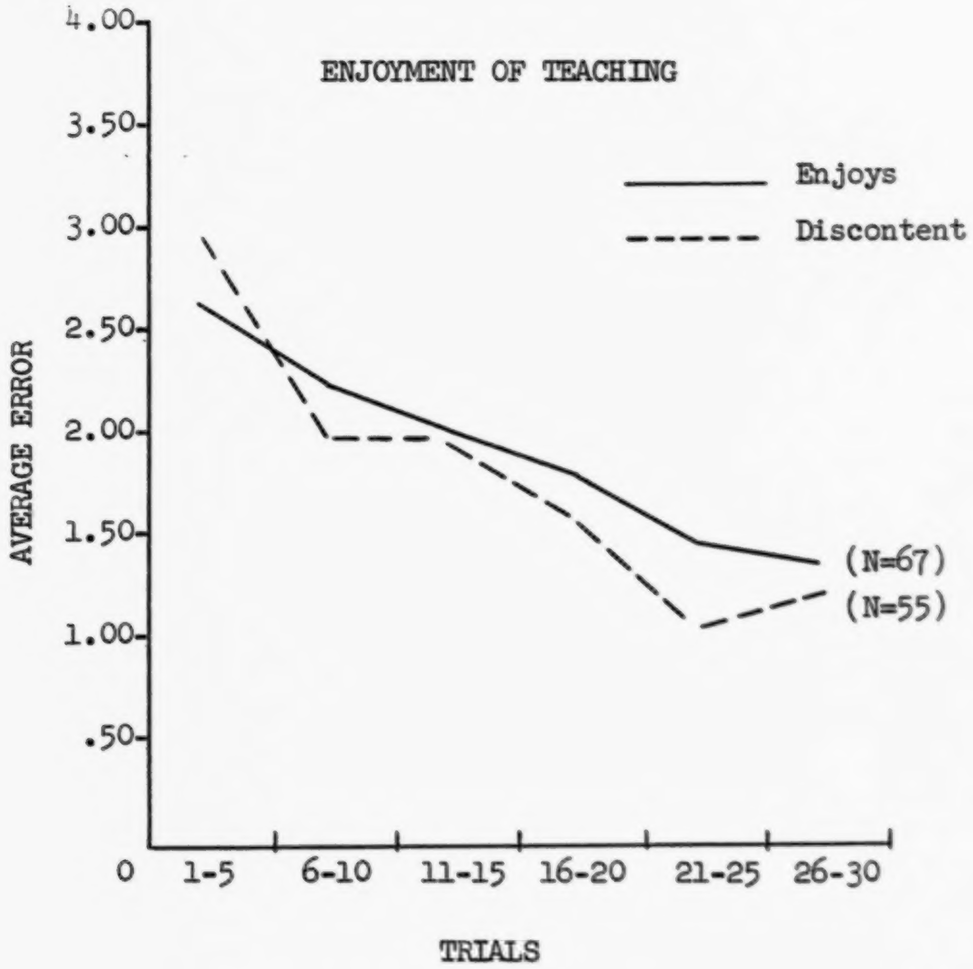


FIG. 5. Problem solving performance over 30 trials by children of teachers who either enjoy or are discontented with teaching.

STUDY 5

The Teacher-Child Interaction and the Impact of Head Start Programs on Cognitive Development in Disadvantaged Pre-School Children

Problem: The present study investigated the relationships between the child's dependency interaction with his teachers and the change in his intellectual functioning after eight months of Get Set experience. Specifically, the study was designed to test the following hypotheses:

(1) Children who gain in IQ from Get Set Programs make more realistic instrumental dependency requests of their teachers than children who fail to gain in IQ.

(2) Children who gain elicit more positive reactions from their teachers to their requests for help, compared to children who fail to gain.

(3) Children who gain make more constructive use of the solicited help they receive from teachers, compared to children who fail to gain.

(4) Children who gain cope more effectively with failure to receive solicited help (e.g., they try to solicit help from another adult, they try to carry out the activity by themselves, they shift to a different activity versus less effective forms of coping with failure of receiving help such as regression and displaced aggression).

(5) Children who gain elicit more social reinforcement for autonomous goal-directed behaviors from their environment (e.g., they receive more attention from adults or peers when engaged in goal-directed behavior.).

(6) Children who gain in IQ compared to children whose IQ scores go down after the eight months will demonstrate greater success with an "intrinsic" problem-solving strategy. This problem-solving situation involved the discovery of a principle in which the child received no other reward or reinforcement than the successful outcome of his efforts.

Subjects: Thirty-six children were selected from the total Get Set sample studied by the E-phase of the Temple Evaluation and Research Center. Two groups of 12 children were matched on the basis of change scores from the fall and spring administration of Stanford-Binet Tests. The first criterion for selection involved matching pairs of children with an equal initial IQ on the amount of gain and loss. This was done to overcome the regression effect that was clearly evident in the group as a whole. This procedure resulted in three groups of 12 children, one group with gains of more than four IQ points, a second group with losses of more than four IQ points, and a third group with changes that ranged between a loss or gain of three IQ points.

A second more rigorous criterion was also applied; children were selected on the basis of whether they exceeded the six-point standard error of measurement on the Binet. The application of the second criterion yielded two groups of children who exceeded the standard error of measurement either by gaining (N = 7) or by losing (N = 7) more than six IQ points.

Procedure: Our measure of IQ change was based on two administrations of the Stanford-Binet, one early in the fall of 1966, and the other late in the spring of 1967, with an approximate interval of eight months.

Teacher-Child Interactions: Data on dependency sequences in teacher-child interaction were obtained through six consecutive 15-minute observations in two situations of the daily educational program in Get Set. (A set of observation categories are attached.) Both situations were free-play and free-work periods. One of these situations occurred at the beginning of the nursery day, and the second took place prior to lunch. A stratified, randomized design was used to assign children to observation periods and to assign each observer to particular children. The design involved assigning six different observers to each of six observation slots for each child. Eighty-five percent of the observations implemented the design.

The data have been processed and punched on IBM cards for computer analysis, which is currently under way. Two preliminary findings have been assembled for the present report and are presented below.

The data presented in Table I are of a descriptive nature since statistical tests of significance have not yet been carried out on these data. The table is divided into four sections. Section 1 reports average frequencies of dependency requests made by children of the teachers. It can be seen from inspection of the first three rows that our first hypothesis is clearly supported for the boys. Gainers make at least twice as many instrumental help requests, that is, realistic requests for help, than the other two groups. The boy gainer also made twice as many realistic as emotional dependency requests. Neither of the other two groups yielded such findings. The data for the girls also support our hypothesis but in a quite different way. Here we find that girls who lost in IQ made, on the average, less than half as many realistic requests for help of the teachers than the other two groups of children. However, girls who gained in IQ made less than half as many plays for negative affection than the other two groups of girls. The data for girls on seeking physical contact were equivocal. Thus we might conclude that our first hypothesis (see page 1) was clearly supported by our findings for boys and was partially supported by our findings for girls.

Section 2 deals with the teachers' reactions to the children's requests for help. We find that the data strongly support our second hypothesis (See Page 1). Boys who gained received at least twice as many positive reactions from teachers than the other boys in the sample. Once more, the evidence for girls also supported our second hypothesis, but only indirectly. Girls who lost in IQ received less than half as many positive reactions from teachers than the other girls.

The third section deals with children's reactions to teachers' responses. In support of our third hypothesis (see page 1) we find that boys who gained made more, that is, twice as many constructive reactions to teachers' responses than the other boys. The data for the girls supports our hypothesis as directly as the data for the boys, but not as strongly. The next part of the third section deals with emotional reactions by the child to the teacher's responses. Although the average response frequencies are rather low for these two categories, the data clearly supports our hypothesis for boys but not for girls. Boys who lost in IQ exhibit more emotional regressive, and displaced aggressive behavior in response to teacher frustrations than the other boys. As indicated earlier, the data for the girls are entirely inconclusive with regard to this hypothesis.

The last section of Table I deals with the greater success of children who gain to elicit attention from their social environment for autonomous achievement striving as manifested by self-sustained goal-directed behavior. As can be seen from the last two rows of Table I, boys who gained when they engaged in self-sustained autonomous activities received at least twice as much unsolicited attention from their teachers than other boys, and about twice as much unsolicited attention (regardless of quality) from their peers than from Teachers, but not markedly so. However, once more we notice that with regard to unsolicited attention from peers, the support for our hypothesis comes from the losers rather than from the gainers.

These findings which are presented here for illustrative purposes indicate that our method of teacher-child interaction analysis appears to be quite promising for a study of the relationship between a child's pattern of dependency interaction with the teacher and the child's ability to make intellectual gains as the result of his experience in Head Start educational programs.

Our analysis of the relationship between patterns in the teacher-child interaction and the child's success in problem-solving under conditions of intrinsic reinforcement is currently being processed for analysis, but not yet ready for presentation. However, our data concerning relationships between a child's ability to gain from his Head Start experience and his success in problem-solving under conditions of intrinsic reinforcement is ready for a preliminary report. As can be seen from Fig. 1, children who gained in intellectual performance from beginning to the end of Head Start manifested better problem-solving performance over 30 trials than the children who lost in I.Q. and somewhat better than the children who showed no change in I.Q. as a result of a year's education in Head Start.

Implications: Although the present study has not yet been completed, there is considerable evidence beginning to emerge that our model of the teacher-child dependency interaction sequence promises to be a powerful tool as a predictor of the ability of lower-class disadvantaged children to improve their intellectual performance levels as a result of attending an all-year-round Head Start educational program. We propose to replicate this study on a much larger group of disadvantaged children. This new study will enable us to obtain much larger samples of behavior, and will not only provide promising leads and suggestive findings as our current exploratory study might do, but it will provide a sound empirical basis for planning experimentation in teacher-child relationships in pre-school programs for the disadvantaged child.

Our method of measuring problem-solving behavior has once more demonstrated its usefulness as a dependent variable. It helped us to establish the fact that the child's abitity to gain from Head Start educational program was not accidental, but was consistently and meaningfully reflected in the child's increased ability to engage in intellectual pursuits, such as problem-solving, as a self rewarding experience.

TABLE 1. CHILD-TEACHER INTERACTION SEQUENCES. AVERAGE FREQUENCIES OF DEPENDENCY REQUEST BY CHILDREN, RESPONSES FROM TEACHERS AND REACTIONS FROM CHILDREN WHO GAINED, LOST, AND SHOWED NO CHANGE IN STANFORD BINET PERFORMANCE FROM THE BEGINNING TO THE END OF A YEAR'S ATTENDANCE IN HEAD START CLASSES.

	BOYS			GIRLS		
	GAINERS (N=4)	LOSERS (N=7)	NON CHANGERS (N=6)	GAINERS (N=6)	LOSERS (N=7)	NON CHANGERS (N=4)
SECTION I Instrumental vs. Emotional Dependency						
Seeks instrumental help	10	4.9	1.1	5.0	1.7	10
Seeks negative attention	4.8	3.3	.7	.7	1.7	4.2
Seeks physical affection	4.5	3.7	.8	7.3	2.6	8.5
SECTION II Teacher Responses						
Positive teacher's reaction	15	7.6	2	10	4.1	14
SECTION III Child's Response to Teacher						
Constructive reactions to teacher's response	24	10	3	11	7	2.8
Turns to others for emotional support	.5	1.0	.2	.5	.5	1
Regressive and displaced aggressive reactions to teacher frustration	.2	.6	0	.2	0	1.2
SECTION IV Attention Received for Autonomous Behavior						
Adult approaches	8.2	3.9	2.3	6.0	5.0	2.3
Peer approaches	10.2	5.7	5.6	5.8	4.4	5.7

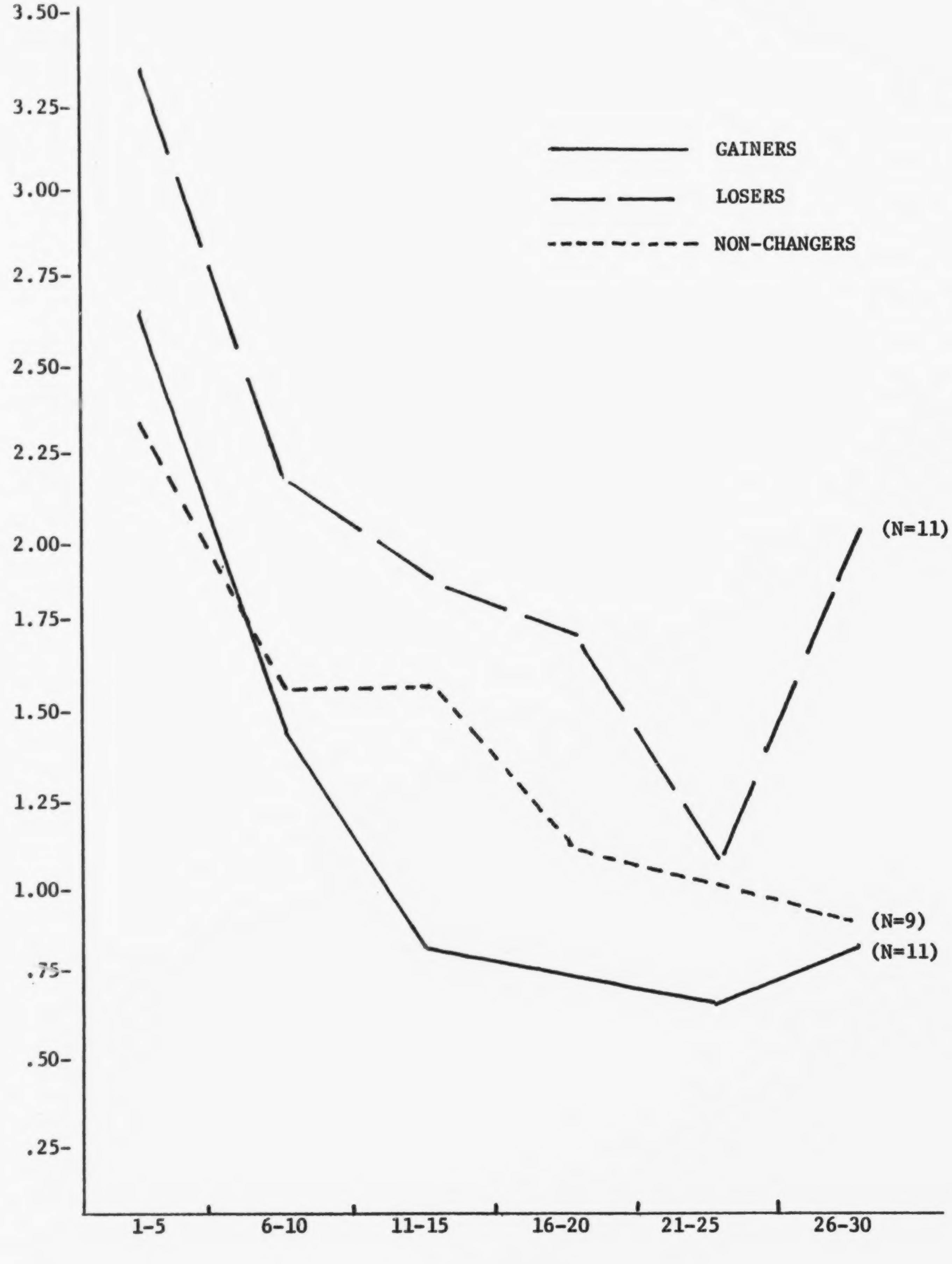


Figure 1. Average number of errors over 6 blocks of trials for 3 groups of Head Start children

CATEGORY DESCRIPTIONS:

Pupil Behavior

1. Instrumental behavior: Seeks services, information, materials, permission for non-routine activities.
2. Positive attention getting mechanism (+AGM): Seeks recognition, greeting, praise, reassurance, attention.
3. Negative attention getting mechanism (-AGM): Does that which the teacher has just requested not be done. (Try to separate this from mere peer interaction. This can be done by noting the amount of attention given the teacher as compared to that given the peer.
4. Ambiguous attention getting mechanism (±or 0 AGM): Attention getting with both positive and negative aspects to it, e.g., doing the right thing at the wrong time or in the wrong way. Tattling: AGM that can't be classified readily as either positive or negative.
5. Body contact: This is assumed to be positive; (If you spot any negative B.C., i.e., hitting, biting, scratching, write in a subscript N with your scoring numeral.) leaning on, touching in any + manner.
6. Proximity to: Child locates self near adult, for no other reason than proximity. Plays near adult when this play could be carried out elsewhere. Sits beside adult.
7. Glances at: Instances of fleeting glances at adult, each glance within 5 seconds of the preceding one. Stares at adult for 20 seconds.

Teachers' Responses

+ Positive response:

Gratifies child's instrumental request.

Acknowledges child's presence by a smile, remarks positively on child's comment.

Distracts in a pleasant manner.

Positive body contact.

Jokes with child.

0 Ambiguous response:

Ploy is ignored.

Child's request is not noticed.

- Request denied:

Child is rejected or request is rejected.

Request is ignored by adult who is stressing her goals, e.g., child wants praise for his picture; teacher ignores picture and tells child to hurry to clean up.

Hybrids

± Adult gratifies, then scolds or withdraws gratification

∓ Adult scolds or denies gratification and finally gratifies.

$\overset{+}{0}$ Adult promises gratification when her current task is finished, i.e., child is asked to wait.

$\overset{0}{+}$ Child is ignored, or his request isn't heard: gratification eventually comes.

DEPENDENCY REACTION OF THE CHILD - horizontal scale

1. Waits patiently: adult is busy with someone, or something else. Child just stands or sits until adult is finished.

   +Teacher has agreed to help, but pupil must wait until adult has finished what she's doing; again just stands or sits.

2. Waits repeating same ploy: continues talking after teacher has replied, (divide by 2 if it is on the same topic)

   = continues raising hand after a peer has been called on.

   = continues misbehaving, looking at adult, body contact.

   = if the teacher's response has been 0, 30 seconds must pass before re-scoring a passive AGM (e.g., behavior #6, #7 and sometimes #5) and divide by 2; for active AGM (e.g., behaviors #1, #2, #3, #4, and sometimes #5) wait 10 seconds before re-scoring.

3. Waits trying other ploys with the same adult: Asking or commenting on a different topic

   = misbehaving in a different way.

   = switches behavior category.

4AI. Makes instrumental request of adult other than the adult initially approached.

4AE. Makes emotional request of adult other than the adult initially approached.

4PI. Makes instrumental request of a peer.

4PE. Makes an emotional request of a peer.

5O. Returns to an occupation previously engaged in (any occupation engaged in previously during this 15 minute observation).

5N. Starts new occupation, something he hasn't done yet during this 15 minute period.

5G. Starts doing the goal of his request.

5S. Solves instrumental request himself.

6. Rejects gratification, at least momentarily.

7. Leaves dissatisfied and regresses: cries, sucks thumb, masturbates, withdraws.

8. Leaves dissatisfied and displaces aggression: hits, bites, kicks someone other than the denier.

   = speaks crossly.

   = behaves hostilely to another.

9I. Leaves satisfied, wanders or sits for 3 minutes without any further interaction.

10I. Leaves not satisfied: child is interacted with before he can initiate his reaction to his teacher's response.

10D. Leaves without satisfaction, wanders or sits for 3 minutes without further interaction.

A.A.S.
QUALITY OF INTERACTER'S INTERACTIONS

+ Adult or peer comments positively concerning the subject's AAS.

0 Adult's or peer's comment to the AAS occupied subject is neither strongly + or - concerning his activity.

   = The comment doesn't refer to the activity.

- Adult or peer makes a disparaging remark about the AAS activity of the subject.

H Hybrid: The adult's or peer's comment to the AAS occupied subject continues both positive and negative aspects concerning the subject's activity.

D Disruptive: Adult or peer comment is aimed at disrupting the subject's activity e.g., "Stop that!" "Let me do that." "Put your things away."

RESULT OF THE INTERACTION OF THE ONGOING ACTIVITY: (Same for both adult and peer) horizontal

C Continues AAS (may pause momentarily to interact, but goes directly back to AAS)

D Distracted from AAS - quits, shifts to new activity, wanders off.

F Interaction comes at end of AAS, i.e., child quits because there's no more to task, not because he was distracted.

QUALITY OF AAS Vertical

Group AAS -Score in this top AAS block is the child has another or other children engaged jointly or in parallel AAS.

Individual AAS -Score in this bottom AAS block if the child is working by himself.

STUDY 6

INTERACTING EFFECTS OF TEACHING STYLE AND STUDENT PERSONALITY VARIABLES ON CREATIVITY IN FOURTH GRADE CHILDREN

Problem: This study was carried out to investigate the interacting effect of environment and personality on behavior. Specifically, it was hypothesized that "indirect" teaching styles as measured by the Flanders-Amidon method of interaction analysis would have a more favorable effect on creativity in a child who has high self-esteem, high tolerance of ambiguity, and low anxiety than in a child who is characterized by the opposite pattern of personality characteristics. Different effects produced by a "direct" teaching style which reflects a traditional authoritarian classroom climate on creativity in children were also hypothesized as a function of the three personality variables: self-esteem, tolerance of ambiguity, and anxiety level. Finally, it was hypothesized that classroom climate would affect a child's performance on extrinsic and intrinsic problem-solving strategies. Specifically, children with a background of teachers who had an indirect teaching style were hypothesized to perform equally well on the two different problem-solving strategies, whereas children with a background of "direct" teaching, would perform better on extrinsic than on intrinsic problem-solving strategies.

Procedure: Four groups of 50 children were selected from a school system in which all children had the same teacher for the first three elementary grades. Teachers in the third grade were rated by means of the Flanders-Amidon method. These children were then followed into the fourth grade and their new teachers were also observed with the Flanders-Amidon Interaction Analysis Method. The children were subsequently divided into four groups. Group I had a "direct" (traditional-type) teacher during the first three years of elementary school and during the fourth year; Group II had a "direct" teacher during the first three years, and an "indirect" permissive teacher during the fourth grade.

Personality variables were assessed in all children by means of a self-esteem scale developed by Lipsett, an anxiety scale (C.M.A.S.) developed by McCandless and Castenada, the Tolerance of Ambiguity Test developed by Elsa Brunswick, and a verbal tolerance of ambiguity test adapted from Kushner.

Children in Group I and Group III were given 50 trials on extrinsic and intrinsic problem-solving tasks. Fifty per cent of the children in Group I were assigned randomly to the extrinsic and the other 50 per cent to the intrinsic reinforcement tasks. The same procedure was followed with Group III children.

Results: Relationships between teaching styles and creativity were analyzed by analysis of variance. It was found that total creativity was fostered more extensively under the influence of consistent patternings of teaching. Verbal creativity was fostered more under indirect patterns of teaching styles, while figural creativity was fostered more under consistent direct teaching styles. (The analysis which yielded these findings was carried out by Wilhelm Weber as part of his doctoral dissertation.)

The interacting effects of teaching styles and student personality on creativity are presently being analyzed. Analyses of relationships between personality and creativity and, finally, of relationships between personality teaching styles and success and failure on extrinsic and intrinsic problem-solving strategies, are also being carried out presently.

For present purposes of continuity with Study 5, I am presenting one isolated finding from this study of fourth grade children which deals with validation of our scales of Teaching Styles. Inspection of Table 1 shows that all 10 of our scales placed the two groups of teachers in the predicted direction. Indirect teachers emerged as less controlling of children, closer to their children, as more individually oriented, more approving and encouraging of exploration on the part of the pupil and as manifesting great enjoyment of their teaching function. This group of indirect teachers also made less distinction between work and play in their classroom, were more flexible in the classroom arrangement as well as more flexible and spontaneous in their daily curriculum and, finally, permitted their children greater control of materials than the group of direct teachers.

TABLE 1

AVERAGE SCALE SCORES OF SEVEN "INDIRECT" AND SEVEN "DIRECT" ELEMENTARY SCHOOL TEACHERS BASED ON THREE INDEPENDENT RATERS FOR EACH TEACHER

	Average Scale Scores	
Scales	Indirect Teachers	Direct Teachers
Controlling Children (9-1)	5.90	4.81
Closeness to Children (1-9)	5.71	4.62
Individual Child Oriented (1-9)	4.95	3.81
Approval Oriented (9-1)	4.66	5.66
Encouraging Exploration (1-9)	5.76	4.52
Enjoying Teaching (9-1)	3.00	4.19
Work-Play Distinction (9-1)	5.14	4.33
Flexible Classroom Arrangement (1-9)	6.71	5.38
Flexible Curriculum (1-9)	5.19	4.33
Control of Material by Children (1-9)	6.19	4.23

STUDY 7

An Experimental Study of Teaching Styles and Creativity in Children

Problem: The present study is intended as an experimental validation of an earlier study. In the earlier study, it was found that "direct" versus "indirect" teaching styles, as measured by the Flanders-Amidon Interaction Analysis, predicted variations in creativity. It was also found that consistencies and inconsistencies in the exposure to teaching styles from year to year had a significant effect on measures of creativity. The present study is being carried out to investigate the effects of "progressive and permissive" versus "traditional" and highly structured teaching styles on creativity for different developmental levels. The hypothesis is that former teaching styles will be more conducive toward creativity than the latter.

Subjects: Seventy-two middle class, Caucasian children will be selected from 12 different classrooms of public schools in Wilmington, Delaware. Occupation and education of parents will be used to control for social class.

Procedure: Two classrooms, each falling at opposite ends of the teacher rating scales described in Study 5, will be selected on each of three grade levels; kindergarten, second, and fourth grade. (One of the extreme patterns, (A) will consist of above-median of high scores on a majority of the following teacher characteristics: control of children, control of materials, distinction between work and play, and group-oriented. At the other extreme, (B) will be teachers who are high on flexibility in programming, closeness to children, child-oriented, approval, and encouraging thinking.)

Three boys and three girls will be selected randomly from each of the classes. (Metropolitan Reading Readiness Tests and S.R.A. Achievement Tests will be inspected in order to avoid biases on intellectual achievement between groups from class to class.) The groups of six children will then be assigned to three experimental teaching sessions, each lasting one hour. One set of three experimental teaching sessions will be continuous with the teaching style of the classroom from which the children were drawn. The other set of experimental teaching sessions will be discontinuous with the teaching style used in the classroom. The study will therefore have a 2 x 2 x 3 factorial design, in which the first factor will be classroom teaching style, the second will be experimental teaching style, and the third will be grade level. The experimental teaching method will consist of reading stories to the children. In the traditional method (See pattern A above), the experimenter will ask a minimum number of questions, will not encourage questions from the children, and will place considerable emphasis on order in the classroom. In the other experimental teaching method (See pattern B above), the experimenter will read the same stories but will encourage questions from the children and will place very little emphasis on classroom order. The Torrence Test of Creativity will be administered to all children after the experimental treatments.

The major hypothesis to be tested in this study predicts that Method B will result in higher creativity, and that this relationship will tend to decrease with increased grade level. (This study is presently in progress.)

STUDY 8

Moral and Cognitive Development in Lower Class Negro Children*

The present study investigated the hypothesis that the child's formation of the concept of time is closely related to the development of both moral judgment and moral conduct. The rationale underlying this hypothesis was that a child's ability to order events along a time dimension is important for his ability to regulate impulse expression and gratification of basic needs. Moreover, it was assumed that a child's ability to regulate and control his impulse is essential for the development of both moral conduct and moral judgment.

The development of the concepts of time and space are important in this context because a considerable part of socialization (and, for that matter, much of what constitutes moral conduct and moral judgment) revolves around the specifications of spatio-temporal conditions for impulse gratification. Therefore, we have singled out ability to order events along the temporal dimension as an essential correlate of moral development.

A second objective of this study was to investigate more fully the relationship between moral conduct and moral judgment. Previous studies have reported some consistency between moral judgment and moral conduct. Beller found developmental changes in the consistency between moral judgment and moral conduct in 9, 12, and 15 year old boys. Kohlberg correlated cognitive developmental measures of moral judgment with teacher ratings of conscience strength and internalized conformity in a sample of 72 middle-class boys between 10 and 14 years of age. After correcting for I.Q. and chronological age, he found a correlation of .31.

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*This paper was presented by Aida Seltzer and E. Kuno Beller at the thirty-ninth Annual Meeting of the Eastern Psychological Association, Washington, D.C., April, 1968.

The present study attempted to improve the consistency between measures of moral conduct and moral judgment by increasing the correspondence between the content in measures of these two factors. Since our measures of moral judgment were derived from Piaget's measures of "moral realism," we confined our measures of moral conduct to this particular meaning of morality - that is, mutual trust, cooperation between peers, and honesty. This point will be elaborated in the procedure section.

A third and major objective in this study was to examine these questions in a sample of lower class Negro children, a population in which socialization and moral conduct are issues of particularly urgent concern. An important aspect of this objective is to determine whether moral judgment, in Piaget's terms, is applicable to lower class Negro children who grow up in urban slum areas under conditions of extreme deprivation. As these children grow older do they manifest the same changes in moral judgment which are found in middle and lower class white children by Piaget and other investigators?

Procedure:

A sample of 18 boys and 18 girls was drawn from each of four classes in three different schools (kindergarten, second grade, fourth grade, and sixth grade classes). These schools were located in a large urban slum area of North Philadelphia, and the vast majority of children came from lower class Negro families. Two of the schools grouped children homogeneously, according to their intellectual ability, and in these schools it was possible to select classes where the average I.Q. fell between 90 and 110. In the third school an attempt was made to control for intelligence by asking the teachers to select only those children whom they considered to have average ability. All task questions were administered to each subject by the same white female examiner, who brought each child from his classroom to a private room. The children responded with a great deal of enthusiasm, and even the youngest age group became easily involved in the tasks.

The measure of moral conduct was based upon teacher judgments. Each teacher was asked to select high and low moral conduct children on the basis of the following instructions:

> We would like you to select X number of boys and X number of girls who in your opinion are the most honest and cooperative children in your class and X number of boys and X number of girls who in your opinion are the least honest and cooperative in your class.
>
> Use as your criterion for honesty, the extent to which the child does or does not cheat, and for

> cooperation, the extent to which he does or does not respect the rights and possessions of the other children.

Each of the eight subgroups therefore contained an equal number of high and low moral conduct children.

The measure of moral judgment was based upon eighteen questions adapted from Piaget. Piaget used these questions to measure developmental change from "heteronomous" to "autonomous" morality. Heteronomous morality is based on the external consequences of behavior and on conformity to adult rules, rather than on the intent of behavior and on internalized standards. The questions took the form of story situations which were presented in an individual interview. The subject was asked to evaluate each of the moral acts involved. Each session was taped and reviewed if scoring problems arose. Higher scores indicated Moral Realism therefore less mature moral judgment. In 1957 Medinnus adapted a group of these questions from Piaget to investigate the development of moral judgment in a group of lower socio-economic white children of the same ages as children in this study. The questions and scoring method he utilized were further adapted in the present study to the language skills of our lower class Negro children.

The measure of the concept of time was based upon 18 questions designed to determine a child's orientation to time and his ability to order events sequentially along a temporal dimension. These questions ranged from very simple time concepts, which required the child to differentiate between a day and a week, to more difficult tasks involving the understanding that clock time would be different according to one's own geographic location. For example, three questions covering this area were:

> Which is longer, a day or a week?
>
> Set the hands of my clock to say quarter-to-eight.
>
> What time is it now? What time is it in California?
> (Child must be able to give the reason for differentiating)

Results:

Clear development trends were found both for moral judgment and for the formation of the concept of time. There was a definite increase in the time score with each successive grade level (see Table 1) - that is, the concept of time became more accurate with age. The moral judgment scores, which decreased from kindergarten to fourth grade, reflected a decrease in moral realism. However, this decrease leveled off at grade four with no further developmental change. Both developmental trends were significant ($p < .001$ when analyzed by analysis of variance).

It is also clear from Table 1 that virtually no sex differences emerged in these developmental trends. It is also interesting to note that Medinnus, who studied moral judgment in lower class white children within this same age range, reported findings very similar to those in the present study. On most of his questions a plateau was reached at fourth grade (or age 10), and no further increase in moral judgment was discernible, at least in sixth grade children. He also found virtually no sex differences in these developmental trends.* In a more recent study of fourth grade, middle class white children, we found a much higher incidence of children who reached the highest moral judgment score on this scale.

The relationships among three variables were studied by means of a correlational analysis (see Table 2). It is clear that the concept of time was the central factor in these interrelationships. A child's ability to make time judgments correlated significantly and substantially with both moral conduct and moral judgment. The relationships between moral conduct and moral judgment were also significant and positive, but lower and less consistent over the entire age span than the correlation of either variable with the concept of time. However, the consistency of moral conduct and moral judgment was for the most part higher than reported by other investigators.

Table 2 also indicates that the relationships among the three variables were consistently lowest for second grade children. Since second grade children are younger than the age which is predicted for a change toward autonomy in moral judgment, this finding might be taken as support for Piaget's hypothesis that prior to the consolidation of a developmental change (i.e., moral judgment) a child goes through a vacillation phase. Such vacillation might involve less stability of functioning, and therefore a lowered relationship between the variables in question.

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* We must be cautious about comparing the findings of these two studies, since the present study modified Medinnus' questions and scoring system.

Summary and Conclusions:

The present study developed methods of measuring developmental changes in the concept of time and in moral judgment for lower class Negro children between 5 and 12 years of age. The methods did reveal developmental trends in these variables.

The major hypothesis of the present study stated that a child's ability to order events on a temporal dimension would relate significantly to his maturity of moral judgment and to his moral conduct. This hypothesis was clearly supported. An attempt to devise methods for finding consistencies or common elements between moral conduct and moral judgment was also supported by our results. In addition, we found strong indication that social class is a far more important factor than ethnic background in the development of moral judgment. Our findings for lower class Negro children were almost identical with those reported by Medinnus for lower class white children, and the findings of both studies differed considerably from our data on middle class white children of comparable age, who reached a more mature level of moral judgment. Finally, our findings lend strong support to Piaget's contention that shift in the development of moral judgment is preceded by a phase of imbalance and vacillation.

Moral and Cognitive Development in Lower Class Negro Children

Aida Seltzer and E. Kuno Beller
Temple University

Table 1

Average scores of the Concept of Time and of Moral Judgment in eight groups of 18 boys and 18 girls.

Grades	Concept of Time		Moral Judgment	
	Boys	Girls	Boys	Girls
Kindergarten	2.3*	2.5	14.9**	14.7
Second	6.5	6.4	12.1	12.8
Fourth	12.2	11.3	9.2	9.3
Sixth	13.3	12.7	9.2	9.8

* High score means better Concept of Time.
** Higher score means less mature Moral Judgment.

Correlations between measures of Moral Conduct, Moral Judgment and the concept of Time in four groups of children (N = 36 in each group).

Grades	Moral Conduct x Moral Judgment+	Moral Conduct x Concept of Time +	Moral Judgment x Concept of Time‡
Kindergarten	-.39*	.81**	-.67**
Second	-.17	.54**	-.47**
Fourth	-.43**	.63**	-.73**
Sixth	-.38*	.88**	-.57**

+ Point biserial r

‡ Pearson product r

* $p < .05$
** $p < .01$

Bibliography

Beller, E.K. "Two Attitude Components in Younger Boys." *Jour. Soc. Psychol.*, Vol. 29, 1949.

Kohlberg, L. *Relationships Between the Development of Moral Judgment and Moral Conduct*. Paper presented at the Symposium on Behavioral and Cognitive Concepts, Minneapolis, Minnesota, 1965.

Medinnus, G.R. *An Investigation of Piaget's Concept of the Development of Moral Judgment in Six to Twelve Year-Old Children*. Unpublished doctoral dissertation, University of Minnesota, Minneapolis, Minnesota, 1957.

Piaget, J. *The Moral Judgment of the Child*. Translated by M. Gabain. New York: The Free Press, 1965.